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ABSTRACT

This text describes an approach to middle level education that focuses on the work children will be expected to do as adults. This approach requires teachers to use instructional strategies that support the development of thinking skills. Chapter 1 explains the rationale for adopting a new approach to middle level curriculum. Chapter 2 examines teachers' planning of lessons and four features of an effective middle school curriculum. Chapter 3 discusses the advantages and implementation of, and teacher's role in, cooperative group learning. An instructional approach that emphasizes student exploration of new areas of interest is the subject of Chapter 4. Chapter 5 considers the process of concept learning. The social, emotional, intellectual, and physical characteristics of middle level students are outlined in Chapter 6. Chapter 7 describes the process of implementing a curriculum on work. Chapter 8 contains sample learning activities related to six areas critical to students' success: management, communication, interdependence, motivation, cooperation, and socialization. A short reference list is provided at the end of each chapter. Appendixes include an analysis of the concept of life's work, the Wisconsin School District Standards and Rules, and a list of middle school career and vocational competencies. (BC)

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A GUIDE TO MIDDLE SCHOOL CURRICULUM PLANNING IN

Exploring Life's Work

Wisconsin Department of Public Instruction
Herbert J. Grover, State Superintendent

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A Guide to Middle School Curriculum Planning in Exploring Life's Work

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Foreword

Exploring Life's Work marks a proud and notable milestone in Wisconsin DPI publications: this is our first guide to middle-level curriculum published since 1950. It represents the work of dozens of middle-level educators who are among those convinced that curriculum reform is needed in middle-level schools that currently model theirs on those of junior high or high schools. For, we now know, young adolescents' learning characteristics, needs, and styles are very different from those of older students. To educate them effectively and to prepare them for future success, we must systematically recognize and accommodate those differences in ways we never before have. Such an education demands equally innovative curriculum.

The middle-level education movement of the 1960s and 1970s courageously laid the groundwork for understanding the importance of young adolescence to children's entire subsequent social, emotional, intellectual, and moral development. Out of that movement has come the recognition that the middle level is not too early for teachers to begin challenging our children to grapple with big ideas, to ponder their futures, and to map out their hopes and dreams.

This forward-thinking publication lays out a curriculum approach that is sure to challenge, excite, and inspire middle-school educators, administrators, curriculum directors, and guidance counselors. It focuses on a big concept, life's work, which is one of the major notions our schools are charged with teaching. Recent surveys of entry-level employees have shown them weakest not in general skills but in the understanding of and ability to perform work. And we realize that our families and communities are sustained only by the most humble, yet ultimately heroic, unpaid labor. Life and work, we have come to realize, are closely interrelated, and life's work—both paid and unpaid—is what sustains our society, our economy, and our entire way of life.

In these closing years of the twentieth century, determining how to instruct students for success in the new millennium is one of the hugest challenges educators face. Wisconsin's children now turn to its adults for an education that will help them live fulfilling, complete, and responsible lives in the global, postindustrial economy and society they will inherit. I am proud to present this publication to Wisconsin's middle-school educators and am sure it will contribute to a meaningful rethinking of middle-level curriculum's role in our children's future success.

Herbert J. Grover
State Superintendent

Acknowledgments

Many dedicated individuals contributed to this guide, and thanks are owed to all of them for their labor, persistence, patience, and expertise throughout the term in which it was conceptualized, drafted, revised, and produced for publication.

The members of the statewide committee that generated the initial ideas for this guide were appointed by State Superintendent Herbert J. Grover in recognition of their knowledge of and interest in effective middle-level education. This committee met for more than a year to think about how junior high and middle-school education ought to respond to contemporary issues such as the knowledge explosion, changing technology, education for employment, developmental guidance, diversity, and equity. The Department of Public Instruction gratefully acknowledges their professional commitment in producing an exciting, innovative exploratory curriculum guide. The committee included the following people. Positions identified were those held at the time the committee was appointed.

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Exploring Life's Work describes a new, as yet untested, approach to middle-level education that focuses on the work our children will be expected to do as adults—but for which they often find themselves unprepared when they graduate from high school. It offers a new vision of middle school curriculum that results from hundreds of hours of brainstorming, contemplation, and creative thinking by a group of middle-level educators and education specialists. These educators have used their classroom experiences (both positive and negative) to help rethink what they believe young adolescents should be doing in school.

This guide summarizes their conclusions, but is not merely a "what curriculum should be" document. Portions of the *Exploring Life's Work* curriculum—such as cooperative group learning and an exploratory focus—already exist to varying degrees in many schools. However, these schools may still lack a coherent, consistent, in-depth, and integrative approach to middle-level curriculum that adequately prepares today's students for the paid and unpaid work of the future. The creation of such a coherent approach is exactly what this guide sets out to provide.

The authors of this guide hope it will serve as a catalyst for change. Yet they recognize that it does not precisely define or explicitly outline a model for the perfect middle-level curriculum. *Exploring Life's Work* can help teachers develop curriculum that leads students to clarify and develop important concepts—concepts that will help them interrelate what they learn in all subject areas. Studies of paid and unpaid work increasingly show that students need twenty-first-century concepts of work. This guide recognizes six concepts as crucial to student success: management, communication, interdependence, motivation, cooperation, and socialization.

School as a Foundation for Life's Work

The *Exploring Life's Work* approach recognizes that young adolescents need a distinct kind of educational program—one that focuses on their developmental needs. Middle-school students need experiences designed to help them recognize and develop their interests, aptitudes, and abilities in ways that are appropriate for this phase in their development. What they do not need is a curriculum comprised of scaled-down versions of high-school-level classes. Nor do they need a curriculum inappropriately expanded to respond to the information explosion: whose goal is to impart more and more information to students and where the quality of children's education is assumed to be in direct proportion to the number of facts they are expected to absorb.

Exploring Life's Work is an essential part—albeit only a part—of the Wisconsin Department of Public Instruction's quest to improve the state's work force by creating new and exciting occupational options for youths. If youngsters are to take full advantage of these options, they *must* begin exploring work at the middle-school level. They will need to be actively involved in their own educational planning, which, of course, presumes that someone will have taught them how to do this.

This approach attempts to teach young adolescents how to get actively involved in planning their own education, which has far-reaching consequences for educators. Gone forever are the days when parents, supervisors, administrators, and teachers could consider the guidance counselor alone responsible for helping students make appropriate educational planning decisions. All adults share responsibility for ensuring that youngsters are prepared to make decisions that are in their own best interest. Teachers have a special responsibility, by virtue of their professional training and experience. Representatives of all disciplines must share responsibility and work together to create local-level curriculum that provides the experiences students will need to make informed decisions. The development of local curriculum based on this guide should facilitate the creation of just such learning experiences.

A major feature of this approach is that it requires classroom teachers to use instructional strategies that support the development and exercise of high-order thinking skills. In this way, it forces the development of "minds-on" abilities to complement traditional hands-on skills. Conventional curriculum has separated "general" from "vocational" education and reserved the bulk of minds-on skill development for those students perceived to be destined for postsecondary academic training, just as it has reserved hands-on skills for those perceived to be destined for "vocational" employment. Study after study of America's entry-level work force shows that this approach simply is not adequate. Whether young adolescents aspire to be front-line workers or middle-level management, assuming we have taught them to cherish aspirations at all, they need to have thinking *and* doing skills.

This holds true both for the paid and unpaid work arenas. Homemakers need management skills, just as corporate vice presidents do, and corporate vice presidents need to understand interdependence and cooperation as well as homemakers do. Much of life's most crucial work is unpaid, and this, too, is something that students need to understand and be prepared to face.

How to Use this Guide

The team that developed this guide makes strong recommendations throughout it and supports them with rationale and research. Nevertheless, educators who read and use this guide will note that the authors stress throughout that it provides *guidelines, suggestions,* and *possible approaches* to an exploratory, concept-based curriculum. This is not a "blueprint" or "canned" curriculum that can be implemented in six or ten easy steps. The reader will also note that this curriculum does not include typical "scope-and-sequence" charts. This reflects the authors'—and numerous other educators'—conviction that schools and curriculum planners have done an excellent job in the past of determining what the content of various curricular areas should be. Schools have also been able to impart that content effectively. Now, many educators believe, it is time for a contemporary approach to middle-level curriculum, one that makes content-area facts and information serve a higher purpose: picking up where education for employment and the middle-school movement currently seem to leave off; creating education that is grounded in student questions and concerns; helping young adolescents make sound decisions about secondary and postsecondary education and career and life planning.

Thus there are no easy answers to the question of how to use this guide. Most readers will want to read the section that describes the rationale behind the *Exploring Life's Work* approach. Educators who already apply parts of the approach may want to skim the chapters that they find familiar and reserve most of their attention for the unfamiliar ones. Many educators will be drawn immediately to the six sample learning activities in Section 8. These include a sample activity for each of the six subconcepts the authors believe are crucial to young adolescents' understanding of life's work: management, communication, interdependence, motivation, cooperation, and socialization. This is not to say that these six concepts are the only important ones. In any middle-school classroom, student questions and concerns will point to other concepts, and teachers will be need to create learning activities that meet student needs. These activities should be used as a point of departure or a foundation for creating further learning experiences.

Rationale for a New Approach to Middle-Level Curriculum

Introduction
Changing Notions of Work and Education
The Role of Middle Schools
The Need for Middle-School Reform
Exploratory and Concept Learning
Other Educational Issues
Conclusion
References

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Introduction

Since the early part of the twentieth century vocational educators have been perceived as having primary responsibility for preparing students for work. Yet a systematic examination of what educators currently are doing in the middle grades is likely to show that little consensus exists about what vocational education's role ought to be at this level. There is also evidence that middle level vocational education is perceived as less important than vocational education at the high school level. Such views about the role of vocational education in the middle grades has resulted in

- little consistency from program to program.
- disjointed offerings that lack an integrated focus and may in fact contain significant gaps.
- an outdated focus that often reinforces inappropriate notions about work in the twenty-first century.

Preparation for work in the coming century may require an entirely new kind of vocational education.

Because young adolescents have specific developmental needs, vocationally oriented programs must be completely redefined for the middle grades.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Education for Employment

The education for employment concept grew out of the Parker Project, a joint education/business research effort between the Wisconsin Department of Public Instruction and the Parker Pen Foundation of Janesville, Wisconsin. Those involved in the Parker Project perceived that *all* educators must be deeply involved in preparing youths for work. Their vision resulted in Wisconsin's Education for Employment initiative (121.02 (1)(m), Wis. Stats.), which dictates that all K-12 educators share responsibility for the "preparation for employment" goal of education. However, those who try to incorporate an education for employment focus in the middle grades currently lack guidance as to how to accomplish this.

Federal law is being designed to restructure the separation that has developed between vocational and academic education. For instance, among the features of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 is the requirement that vocational and academic be broadly integrated, or reunited. Integration of what has come to be viewed as two fundamentally different strands of instruction is a complex issue. Some educators interpret the notion simplistically, viewing students as receptacles into which both types of content must now be poured simultaneously. As a result, comparatively modest examples of academic content incorporated in vocational course work or vocational content incorporated in academic course work are being touted as integrative measures that will meet the Perkins Act's requirements.

However, numerous educators view true integration as a challenge that demands nothing less than a full restructuring of schools. (Rosenstock, 1991.) These educators maintain that academic/vocational departmental or course work distinctions have outlived their usefulness. They believe that real integration can be achieved only after such artificial distinctions cease to exist. This view is based upon the belief that the education needed for entry level success in today's workplace is not essentially different from the education needed for success in postsecondary programs in general, whether vocational-technical or four-year-college ones.

Efforts to reform middle-level education have made considerable progress in the nearly 30 years of the middle-school movement. Awareness of the characteristics of early adolescents and their learning styles and recognition of the importance of changing institutional features of the middle-level grades (such as school climate) are two issues that have derived from the movement. However, the movement has essentially ignored what perhaps is the most critical question in this or any kind of school reform: "What should be the curriculum of the middle school?" (Beane, 1990, p. 5.)

The authors of *Exploring Life's Work* offer suggestions for what should be included in that curriculum. Grounded in a broad view of K-12 education's goals as well as changing notions of the role of K-12 education in the United States, this guide discusses three important areas for middle-level curriculum planners: the role of middle schools in educating children for their life's work, the general need for middle-school reform, and the role of exploratory and concept learning in addressing the middle school.

The Broad View of K-12 Education's Goals

The purpose of our schools is to equip our young people with the knowledge and skills they need to succeed as effective learners, workers, and citizens.
—Institute on Education and the Economy

Hartoonian (1989) contends that there exist three essential broad goals for K-12 education.

- preparation for **employment** (learning about the professional or vocational work attitudes and skills necessary to achieve one's work goals)
- preparation for **lifelong learning** (learning how to learn in any setting)
- preparation for **citizenship** (learning about one's cultural heritage and the political, economic, and social systems in which we all learn, work, and live)

Preparation for employment, lifelong learning, and citizenship culminate in self and social understanding for the early adolescent. This understanding is the ultimate end of K-12 education and a curriculum based upon *Exploring Life's Work*. Determining precisely what these goals are is not as important as ensuring that whatever goals are adapted significantly influence the school's curriculum.

Hartoonian's three goals obviously are not mutually exclusive. It is difficult to determine where preparation for employment ends and preparation for citizenship begins, since both share many of the same behaviors, attitudes, and skills. For example, developing effective communications skills prepares students for employment, citizenship, and lifelong learning. Similarly, preparation for continued self-development or lifelong learning currently is being widely acknowledged as an inevitable part of employment. As Hartoonian points out, however, in the real world of education these goals are treated as disjointed pursuits: education is vocational *or* academic, not vocational *and* academic.

An education system that served us well through the Industrial Age must now adapt to an Information Age to prepare youths adequately for the employment (work), citizenship, and lifelong learning realities of the twenty-first century. This guide offers a new method of teaching at the middle level that uses these goals as the context of education for employment.

Changing Notions of Work and Education

A major flaw of K-12 education in the United States has been that it inappropriately continues to promote the notion that "work" is essentially what people do with their hands. In recent decades, social, political, economic, and technological shifts have dramatically changed the entire context of work, including the way work is organized and structured. Today in the United States, work increasingly involves what people do with their minds.

This is not to say that work is or ever will be comprised *solely* of thinking skills. However, a trend has evolved in which all workers—those traditionally designated as "managerial," those on the front lines, and those who do the unpaid work of the family —are required daily to apply numerous skills that involve both thinking and doing. Therefore, schools must introduce and teach both "hands-on" and "minds-on" skills when preparing students for the world of employment.

To address this changing concept of work, a variety of commissions, study groups, and task forces have devoted much attention to the need for "basic skills." The expanded basic skills include reasoning, problem solving, cooperation, and the ability to adapt to changing conditions in the workplace of the future.

NASBE report on curriculum reform. The National Association of State Boards of Education (NASBE) curriculum study group concluded in October, 1988, that curriculum and instruction should focus on "preparing graduates who can think, learn, solve problems, communicate, express themselves, work cooperatively, be responsible citizens, and appreciate pluralism," among other goals. (NASBE, 1988.)

The curtain of mechanization has come down between the mind and the hand.
—Anne Morrow Lindbergh

Carnegie Forum report. Marc S. Tucker's and David R. Mandel's report, "Competitiveness and the Quality of the American Workforce," concluded that workers "have to go way beyond the skills necessary to be cogs in an industrial machine." Needed skills include being able to read complex material, to write and communicate effectively, to understand and solve problems in mathematical and scientific terms, to work in teams, and to be self-reliant. (Tucker and Mandel, 1987, pp. 7-8.)

ASTD and U.S. Department of Labor research. A two-year, joint project of the American Society for Training and Development and the United States Department of Labor concluded that today's workplace "requires employees to have not only the standard academic skills. . .but also other key basics as a foundation for building broader, more sophisticated job-related skills." These include learning to learn, listening, problem solving, creative thinking, self-esteem, motivation, interpersonal skills, teamwork, and negotiation. (Carnevale, et al., 1988, p. 24.)

These reports clearly reinforce the notion that, for students to be adequately prepared for paid work, they will need to learn skills at all levels of education, from kindergarten through secondary school.

While these reports focus on preparation for paid work, it is important for educators to realize that work is not limited to paid employment. The concept of "work" in this guide also involves all of the unpaid work of the family, civic duties, and unrecompensed lifelong learning. This has important implications for education: students need to be aware of the breadth of activities they will pursue as part of life's work.

Students need to recognize and to begin systematically examining the array of ways in which work is performed as part of their search for self and social understanding and their exploration of life's work. To help students with this search and exploration, educators have the opportunity to incorporate a number of important goals into education for employment.

- Students need to explore general categories of work that exist and the fundamental differences between them. For example, teachers might prepare lessons that encourage a broad comparison of the management and productive aspects of business, industry, and family.
- Students should have opportunities to explore the personality characteristics that are required by and seem to be best suited to the different categories.
- Students need to understand the nature of the education and training required for success at various levels in various categories of work.
- Students should be able to discover and evaluate their own interests, aptitudes, and abilities in relationship to the various categories of work.

The Role of Middle Schools

Impaled on my wall
my eye can dimly see
the pattern of my
life and the puzzle
that is me.
—Paul Simon

The developmentally appropriate mission of middle schools as it relates to the three broad goals for education is unclear. Yet most would agree that middle-level programs must begin helping students to achieve all three of them and to recognize their interrelatedness so that they will be prepared for the adult world of life and work. This guide offers suggestions middle school educators should consider as they begin to identify and document the thinking skills and lifelong learning components effective middle school curriculum will need to address.

In the middle school, the proper focus of both vocational education and education for employment is the student. At this stage in their development young adolescents need to explore and discover who they are and what *they* want to become, not merely what society or specific employers need. Both vocational education and education for employment curriculum may be overly influenced by the social efficiency theory of education that dictates that society's need for workers should dictate the nature of curriculum.

While the realities of the workplace cannot be ignored, there is nothing to be gained by encouraging students to narrow their thinking at this early stage. Students will have ample time beyond middle school to begin matching what they know about themselves with the economic and supply/demand realities of the workplace. However, it is crucial that they ultimately arrive at that matching task with knowledge of their interests, capabilities, needs, and dreams as well as a solid understanding of what different types of paid work involve. Otherwise, they will be in danger of floundering for months, years, or longer at junctures where they are required to make decisions about their adult work, such as choosing courses in high school, selecting among postsecondary options, and searching for employment.

The Need for Middle-School Reform

Whereas middle schools are in the position of being able to intervene positively and teach education for employment skills to young adolescents, few middle schools have implemented curriculum that makes this possible. Two very important and complimentary trends currently underscore the need for educational reform at the middle level: increased emphasis on higher order learning for all students and on efforts to restructure middle-level education.

Even in the best schools, a close examination of the curriculum reveals a lack of coherence.
—John Taylor Gatto

Edward Brazee (1987) goes so far as to say the most striking characteristic of middle-level curriculum is its overall lack of a conceptual base. The typical middle-level curriculum may be no more than a hodgepodge of unrelated concepts, skills, and information. Little effort is devoted to what Kenneth Tye calls integrating concepts and experiences. Much like high schools, junior high or middle schools are primarily compartmentalized in their structure and, in fact, are modeled on high schools whose curriculum, in turn, is modeled on that of the college or university.

As indicated earlier, *Exploring Life's Work* presents the notion that education should be both academic and vocational in nature with the boundary between the two types of learning blurred. Therefore, wherever it is appropriate to do so, curriculum must eliminate the rigid boundaries between the disciplines to encourage students understand how the "subjects" of their learning are interrelated.

The Importance of "Minds-On" Curriculum

According to Harlan Cleveland (1986), information processed into knowledge and wisdom has become the dominant workplace resource in the United States. In fact, today, more than half of all work is "information work." As a consequence, the nature of work for which students must be educated is changing faster than ever before.

Such information work requires integrating thinking, the type of thinking that can only be taught via integrating learning experiences. Kenneth A. Tye has analyzed how middle-level schooling encourages passive learning by focusing on *integrated* rather than *integrating* (or integrative) experiences. He maintains that the distinction between integrated and integrating learning experiences is far more than an exercise in semantics, even though both concepts have been largely ignored by practitioners.

Integrated experiences are planned by teachers and curriculum developers to bring together (and organize ahead of time) related concepts, content, and/or processes. Students are then expected to absorb or consume what has been integrated for them. Core, block, and interdisciplinary courses are the main organizational plans that purport to promote integration. (Tye, p. 73) The danger of this type of learning is that students never become actively involved in seeking connections or in becoming responsible for creating their own schemes for organizing information into knowledge.

[I]nformation work requires integrative thinking and a global perspective, precisely the kind of brainwork-in-breadth that most of our schools and colleges aren't yet set up to encourage.
—Harland Cleveland

Integrating or integrative experiences, on the other hand, are those which are designed to let the learner actively make his or her own organization and actively use information as a necessary part of the learning process. The focus is *not* on how educators organize curriculum, but on how teaching and learning proceed. Integrating experiences require the learner to seek relationships between past and present experiences and learnings.

Tye maintains that the advocates of middle-level educational reform have inappropriately chosen to emphasize integrated experiences. However, *Exploring Life's Work* offers a reformed curriculum that uses concept learning and exploration to provide integrating experiences.

Children are born with naturally integrative minds: they perceive their experiences as holistic, unified, rather than broken into parts. They are by nature integrative. The current educational system neatly separates experience into academic or vocational subjects and disciplines, teaches from that viewpoint, and ultimately tests and grades children on how well they conform to this view of the world. Efforts to help learners reassemble the parts into a coherent whole do not take place.

Since no real-world concepts, problems, or issues fit neatly into the jurisdiction of a single academic or vocational department—let alone a single subject or discipline—it is little wonder few students ever learn how the different parts of their education fit together or how their education fits into a broader life context. Often, the more children learn in school, the less that learning is interrelated. Given the way content has been organized in most junior high and middle schools, it is understandable that youths have found it difficult to integrate or connect what they learn in school to life outside of school, how it is used in work, and how it relates to lifelong learning.

The Danger of Traditional Curriculum

Traditional educational programming determines present practices regardless of our changing society and work force. Middle-school programs continue to reflect a conventional approach to education characterized by the traditional subject (discipline-specific) studies and typically avoid integrating experiences. Most fail to introduce students to all of the educational opportunities typically available in high school and neglect teaching students to use the decision-making processes they will need to make informed choices among those opportunities. Conventional middle-school programs also do not make students adequately aware of the potential consequences of doing well or poorly in high school. Too much concentration has been focused on learning specific content. When students focus on "pieces" of unrelated knowledge, the opportunity for creating meaning by linking learning and experience is diminished.

If middle-level students are to retain what they learn, they must be able to organize it within a larger context and create meaning for themselves. Isolated facts with no context are likely to be forgotten quickly. To serve students' education for employment needs, educators must design curriculum that no longer promotes the simple transmission of ideas and facts with the assumption that students will absorb, retain, and make sense of them. The authors of *Exploring Life's Work* have created this guide to middle school curriculum development based on concept learning, exploration, and cooperative learning in an effort to share a curriculum that helps students organize ideas and facts into true knowledge: information in context.

Exploratory and Concept Learning

The authors of *Exploring Life's Work* believe that exploration ought to continue to be a major aim of middle-level education. But the ends for which children are being educated have changed greatly during the past 75 years and so, too, must the prevailing definition of exploration. The 1900s view of exploration has been stretched to its limit; it no longer fits the needs of today's students. For the purposes of this guide, exploration means curriculum designed to assist students in seeing (forming a mental picture of) the major properties or inherent characteristics of life's work to help them discover and/or clarify who they are and what they would like to become.

> *Teaching is something above and beyond teaching lessons and facts from books . . . . It is helping a youth to find a path that will eventually lead him through fields of frustration and modern pitfalls of destruction until he finds himself.*
> *—Jesse Stuart*

A New Notion of Exploration

Exploring life's work is a serious matter, and middle school should not be viewed merely as practice for high school. How effectively young adolescents explore and the quality of the decisions they make will have a profound effect on the course of their lives. Exploration is a result of curriculum design, and it has three interrelated purposes, each of which has a corresponding question that middle-level learners might ask.

- The first purpose, self-understanding, is expressed in the question, "Who am I?"
- The second purpose, social understanding, is expressed as "What is life's work?"
- The third purpose, goal development, is expressed as "What would I like to become?"

Who am I? Curriculum is exploratory when it is intentionally designed to help young adolescents answer the question "Who am I?" This means that a major source of curriculum is questions that naturally occur to middle-level learners as a consequence of the fact that they *are* young adolescents. These questions have meaning to students, and their solutions have the potential to motivate and guide students in developing a realistic self concept. So, exploratory curriculum advances an exploration of self. It also helps each young adolescent create a system that lets them assimilate new ideas or information about self with pre-existing ideas.

What is life's work? Exploratory curriculum also is intentionally designed to help young adolescents answer this question. Students' responses will be heavily influenced by their concepts of self and life's work. The self-concept is a person's description of the attributes he or she believes he or she possesses. (Beane and Lipka, 1984, p.5.) What a student perceives as his or her personality, interests, aptitudes, and attitudes ought to heavily influence post-school goals and tentative work plans.

What would I like to become? A student's perception of the concept of life's work will heavily influence his or her post-school goals and the ability to achieve them. Middle-level exploratory curriculum students to see how the courses they elect and the extra- and co-curricular activities they participate in will affect their eventual goals. By asking and systematically attempting to answer the question "What would I like to become?" young adolescents will begin to recognize that they alone can adequately identify their goals and to create strategies to achieve them.

Exploration and Concept Learning

Exploration has become a matter of concept learning: of learning about the concept of self and the concept of work. Concept learning is the process by which students explore the major properties and inherent characteristics of key concepts. It serves exploration by helping students imagine what they want do be upon completing school and how that fits into an overall set of life's work goals. This guide devotes a chapter each to exploration and to concept learning.

Other Educational Issues

Other educational issues support the need for this guide.

Passive learning. One natural consequence of being a young adolescent is that middle-school learners actively seek answers to questions of vital consequence to them. However, passive learning is the norm in most middle schools. Thus, middle-level learners perceive—probably correctly—that much of what they are being asked to learn holds little meaning for them. Exploration, concept learning, and cooperative group learning provide active learning strategies that mesh well with this phase in children's lives. A later section of this guide, entitled "The Nature of the Learner," discusses this in further detail.

Persistence of sex-role stereotyping. Many middle-level courses (for example, shop) and some entire disciplines (such as home economics) remain essentially segregated by sex. The inherent nature of and even the labelling used for much existing course-work sustains the sorting of students by gender and class expectations. Outdated societal sex-role expectations will persist as long as educational programs accommodate them. This guide attempts to remove or counteract what was previously perceived as appropriate sex-role expectations for boys and girls.

[S]ince people learn in different ways and at different paces, how, where, when, and with whom they learn should be determined by what works best for the individual learner.
—Wm. T. Grant Foundation report, "The Forgotten Half"

Persistence of class-role stereotyping. Middle schools also promote separation of students with academic and vocational interests. Schools and educators set expectations that sort students into a two-tier social organization. The "best" students—those who perform well on standardized tests—are expected to aspire to careers that focus on working with their minds; they are expected to go on to higher education and the professions. The rest of the students are expected to enter the trades, and the balance of their education is spent preparing them to do manual work. This ability grouping begins in elementary school but continues through the middle grades. (Rosenstock, 1991.) Thus, the "tracking" of middle-school students can begin at precisely the time in their life when they would benefit from exploration of diverse possibilities. *Exploring Life's Work* offers a way to break this unrealistic pattern of expectations, which fails to recognize new and emerging patterns of work that combine both manual and mental labor.

Unrealistic expectations for guidance counselors. Perceived shortcomings in a school's guidance program typically are attributed exclusively to the guidance counselor. However, as Wisconsin's *School Counseling Programs: A Resource and Planning Guide* (1986) points out, all school staff members ought to be involved in delivering developmental guidance. Teachers are among those who need to recognize their guidance role and contribute to the delivery of competencies identified in the Wisconsin Developmental Guidance Model. The exploratory approach offered in *Exploring Life's Work* provides a means for infusing these competencies into day-to-day classwork.

Lack of educational planning skills. High school professional staff have noted that few freshmen possess the knowledge or skills they need to participate in the planning of their own education, such as choosing classes, deciding on a course of study, and setting postsecondary and career goals. *Exploring Life's Work* offers a way to teach students basic planning and motivational skills that will later help them make important life and work decisions.

Isolation of the classroom. The notion that education is limited to the events that happen within a classroom is still a powerful one. This persists despite the fact that many educators acknowledge that students learn best when actively involved in exploring, creating, interviewing, relating, visiting, researching, etc. *Exploring Life's Work* suggests ways that teachers can break down the classroom walls and provide their middle school learners with a more realistic and effective education.

Lack of structural reform. Although numerous reform movements have been focused on schools, it is rare that concepts, themes, generalizations, student questions, or student concerns are used to organize the curriculum of a middle school. As was the case at the turn of the century, traditional course and discipline organization remains the foundation of middle-level curriculum. This organization may be the most significant barrier keeping students from seeing the interrelatedness of curriculum.

Most middle-level curriculum requires students to skim across the surface of issues to ensure that the entire syllabus is covered during a school year. Learners currently have little opportunity to spend time on key issues or to pursue thoughtful analysis of topics of interest. The following chapter offers a model for bringing middle school curriculum into line with students' needs. Elements of the model may apply both to middle-level curriculum in general and specific portions of it.

The authors of *Exploring Life's Work* suggest that curriculum developed and instruction provided according to recommendations included herein will have far-reaching effects. Young adolescents taught in this manner will begin to

- look to and think about the future.
- recognize that they are primarily responsible for their own educational planning.
- organize or integrate what they learn around enduring key concepts such as "work."
- understand how what they learn in school is related to future life roles.
- recognize the broad scope of work in the twenty-first century and how what is learned in formal education can prepare them for that work.

In addition, they will develop important lifelong learning skills. They will construct answers to many of the questions that occur as a natural consequence of their stage of development. They will identify and begin to develop and use higher order thinking skills. Finally, they will develop or improve the cooperative human relations skills that will prove essential to success in the twenty-first century.

Schools remain the institutions through which young adolescents learn about their place in the world and develop the commitments to themselves and others that shape their future.
—Massachusetts Advocacy Center and the Center for Early Adolescence

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Conclusion

The aim of *Exploring Life's Work* is to help educators create curriculum that guides young adolescents in developing a vision of their life's work based on what they have learned about their own needs, interests, aptitudes, and abilities. This vision should compel students to plan a coherent sequence of courses based on and leading to their post-school plans. Curriculum that revolves around the students' vision will enable students to take greater responsibility for their own educational planning.

Educating students to take their places in the twenty-first century's sophisticated workplace and complex social realm demands no less than the kind of curriculum reform advocated in this guide. Thus, this guide's rationale is ultimately student centered. This may surprise individuals accustomed to thinking in terms of existing categories such as traditional subjects or vocational versus academic education or the subject areas rather than in integrative, interdisciplinary educational curriculum. However, ample evidence supports the need for such curriculum reform, and *Exploring Life's Work* is designed to help educators respond to this need.

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The Exploring Life's Work Approach to Middle-School Curriculum and Instruction

A New Approach to Curriculum and Instruction
Four Features of Effective Middle-School C&I
Assembling a Picture Puzzle: A Metaphor for Concept Exploration
Sources of Middle-Level Curriculum
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A New Approach to Curriculum and Instruction

One function of schooling should be to prepare students for the real world.... The reality is that it does not.
—Renate Nummela Caine and Geoffrey Caine

Even though preparation for work is one of the goals of K-12 education in Wisconsin, traditional subject areas have rarely assumed responsibility for dealing specifically with the key concept of work. Inadequate attention to this goal led to the joint Wisconsin Department of Public Instruction and Parker Pen study that supported the development of Wisconsin's Education for Employment standard (PI 8.01 (2)(m), Wis. Adm. Code). Yet many teachers still fail to acknowledge responsibility for this broad educational goal and are reluctant to surrender precious time from teaching existing course- or content-centered curriculum to address the concept of life's work.

Until now, teachers have had no blueprint for teaching about life's work. The primary goal of *Exploring Life's Work* is to suggest how middle-level teachers and other educators can design curriculum and instruction to help young adolescents develop a meaningful concept of work. This guide proposes that all teachers, regardless of certification and discipline, share responsibility for exploring work throughout the middle-level curriculum. Working cooperatively, all teachers can help students achieve the goal of preparation for work by teaching them to

- identify and evaluate work and career choices.
- acquire skills that allow them to make realistic decisions about work.
- recognize that education and learning are lifelong endeavors.
- identify and develop cognitive and affective skills related to work.
- apply to work situations the academic skills they develop in school.
- learn about work.

Four Features of Effective Middle-School C & I

The authors of this guide believe that effective middle-level curriculum and instruction (C & I) has four features. In this guide, "effective" curriculum is that which helps young adolescents systematically begin giving serious thought to their current and future paid and unpaid work roles. A brief discussion follows each of the four features, and a separate section of this guide is devoted to each. Effective middle-level C & I

- responds to the learning characteristics of young adolescents;
- is exploratory in nature and spirit;
- uses concept learning; and
- uses cooperative group learning.

Responding to Young Adolescents' Learning Characteristics

This guide seeks to link the middle-level learner's developmental needs, learning characteristics, and capacities to the program of instruction developed for the middle school. As such, middle-level students' needs, characteristics, and capacities represent the underlying foundation upon which all of

Exploring Life's Work has been built. All of the teaching strategies, methods, and approaches advocated in this guide are rooted in the special physical, social, emotional, and intellectual needs of the young adolescent learner.

In short, middle-school learners want to examine "the why" of things in an active, participatory, and exploratory manner rather than sit quietly and memorize isolated facts. Their teachers need to encourage original thought and inquiry and devote energy to teaching students how to learn. To take advantage of the natural curiosity and tremendous energy of young adolescents, middle-level teachers need to design curriculum that spurs students to inquire, hypothesize, experiment, test assumptions, and develop concepts and theories.

Any learning activity can be made more meaningful for young adolescents by capitalizing on the highly social student culture of the middle school. By using the right strategies, middle-level teachers can get their students emotionally involved in their own learning. This will permit students to see how what they are learning applies to *their* lives and how one topic, idea, or subject is related to others.

Middle-school students are concerned about the future. They want to explore the options it may hold for them. The concept of life's work is an ideal organizing tool for activities, units, or even whole courses. Since a complete picture of the work adults do after completing their formal education is no longer easily observable—and because middle-level students are curious about this mysterious transformation from student to adult worker—young adolescents need to be guided systematically in thinking about the future as it will unfold in a unique manner for each one of them. Having thought about their future work, students can become more fully engaged in educational decision making that helps them achieve the future they envision for themselves.

This guide attempts to respond to the young adolescents' developmental needs by making student questions and concerns a major source of curriculum and by employing exploration, concept learning, and cooperative group learning, which are philosophically grounded in the learning characteristics of young adolescents.

Children have never been very good at listening to their elders, but they have never failed to imitate them.
—James Baldwin

Curriculum Exploratory in Nature and in Spirit

Exploration in the junior high or middle school has traditionally been viewed as that portion of the school day reserved for mini-courses, activity periods, or "exploratories." Art, music, foreign language, industrial arts, and home economics were among those courses referred to as being exploratory.

Exploring Life's Work promotes a new view of exploration in which exploration is an approach to all curriculum. It is intended to help students focus on major properties of concepts that will help them discover who they are and what they would like to become. For instance, as they begin to form a contemporary image of the concept of life's work, students will begin to comprehend the complexity of work in today's society. Instructional activities would be designed to guide students as they reflect upon the major properties or characteristics of work. This, in turn, will help them further refine their own concept of work. Activities would also be designed to help them question how what they already know about *themselves* (their interests, capacities, talents, limitations, etc.) relates to the concept's major properties or characteristics of the concept. So, while key concepts form the larger context for exploration, the questions young adolescents have—about themselves, the world, society, and so forth—guide exploration.

An exploratory approach to classroom activities will help students make their own decisions and to apply those decisions to setting personal goals, to handling family responsibilities, to managing and building personal relationships, and to creating tentative plans for future work. In the process, students will learn to form and apply concepts so they may arrive at meaningful solutions to important problems. This learning process will also provide opportunities for students to build self-esteem and to reflect on how they solved problems.

In summary, exploration affects both what is taught and how it is taught. And it should ultimately influence the entire middle-level curriculum.

Concept Learning

The knowledge all individuals need to function effectively in an information-based society places a premium on integrated rather than compartmentalized thought. This reflects the United States' historical movement toward an economy that produces information and away from an economy that produces material goods. Information processed into knowledge and wisdom has become the nation's dominant resource (Cleveland, 1986), and there is no doubt that the major product of America's workers in the future will be ideas and knowledge. The skills that made the nation a leader in the industrial age—manipulating and transforming materials and objects—will no longer suffice to ensure the United States will remain a leader in the global economy of the twenty-first century. Manual skills will increasingly need to be combined with the skills of thinking, communicating, decision-making, and so forth.

> *We know that . . . the brain has modes of operation that are natural, effortless, effective . . . . Coerced to operate in other ways, it functions as a rule reluctantly, slowly, and with abundant error.*
> *—Leslie Hart*

America's schools have done a good job in the past of teaching specific concepts and skills to students so they might apply them directly in the industrial, paid workplace. But the utility of these narrow concepts and skills grows ever more limited. Teaching specific concepts typically has involved little more than leading children to memorize factual information or objective descriptions of a task. While teaching specific concepts may have been appropriate at a time when much work was standardized and repetitive, the changing nature of work—and therefore of preparation for work—demands education that offers opportunity for inquiry, discussion, and clarification. In the realm of paid work, these are among the work skills employers increasingly find essential.

Teaching specific concepts or content will not help students make connections between ideas or learn the human skills necessary for success in the employment, family, and civic arenas of the twenty-first century. One of the major shortcomings of subject offerings in public schools, according to John I. Goodlad (1984), is the failure of learning activities to connect the student with the structure and ways of thinking of a field.

It is up to educators to help learners develop, clarify, and extend their understanding of significant ideas by building on past experience and knowledge. As a consequence, *Exploring Life's Work* promotes the use of concept learning, an instructional approach ideal for developing, clarifying, and extending broad concepts. *What is being recommended herein goes beyond finding interdisciplinary themes for existing curriculum.* Key concepts, which form the basis of concept learning, are broader than themes and legitimately embrace ideas currently included in all disciplines. When correctly chosen, these key concepts can serve as "hooks" for the many subconcepts they subsume. They also provide an enduring framework onto which students can build a life's worth of learning.

Concept learning is best achieved at the middle level using both concrete application and abstract reasoning activities. At the middle-level, thoughtfully designed "hands-on" activities often provide the only way to achieve the desired "minds-on" outcomes among young adolescents. In other instances, learning activities need to be planned for a dual purpose: applied instruction and the development of the thinking process.

Cooperative Group Learning

It is crucial for young adolescents to begin to understand that they are and will increasingly become interdependent people operating in an interdependent world. In fact, interdependence is one of the major features or subconcepts of life's work. Cooperative learning groups provide the best means known to help young adolescents develop an understanding of this and other subconcepts.

The future workplace requires cooperation rather than competition, skill in acquiring, rather than remembering, new knowledge, and practice in solving problems.
—Thomas R. Owens

Middle-level students must develop a sense of when individual, cooperative, or competitive work efforts are appropriate. When correctly used, cooperative group learning can teach them to recognize this. Learning groups also provide opportunities for students to explore each others' meanings and to test their own patterns of concept formation. Thus cooperative group learning is an indispensable strategy for concept learning. In addition, cooperative learning provides students with a sense of community that helps them prepare to be effective citizens. It also helps them realize how they can adequately prepare themselves for the future and understand their present situation.

All in all, restructuring curriculum and learning activities to include cooperative groups will provide adolescents with practice in the very skills that will prepare them for lifelong learning. And, as numerous studies of the economy of the twenty-first century show, lifelong learning is likely to be one of the features that will ensure success in all of life's work.

Assembling a Picture Puzzle: A Metaphor for Concept Exploration

Since preparation for work is a general goal of K-12 education, it is appropriate for middle-level students to begin systematically forming a complete mental picture of life's work. Educators begin the process of concept formation by helping middle-level students identify and organize the somewhat dominant major features or subconcepts that comprise the concept of life's work. With these major features or subconcepts in mind, children can then begin identifying characteristics of life's work as well as noncharacteristics that do not apply to the concept. In this process, students form a mental picture of the concept much in the same way any individual might assemble a 300-piece jigsaw puzzle.

Step One: Getting the Big Picture

The first logical step in assembling a jigsaw puzzle would be to look at the picture on the cover of its box. Seeing the completed picture permits the assembler to perceive the puzzle's structure, content, and complexity, making it easier to sort the pieces according to which part of the scene a particular puzzle piece is likely to fit. A glance at the big picture will not permit the assembler to appreciate all of its details fully. He or she would, however, be able to determine whether the picture is a portrait, a landscape, or some other common puzzle genre. It may also be possible to recognize major properties or inherent characteristics of the particular genre; a summer mountain landscape may have green valleys with red and yellow buildings, blue-grey rocky slopes capped with snow, a blue sky with clouds, and so on.

Some characteristics of a summer mountain landscape that are familiar to the assembler may be missing: this particular scene may lack a smooth, glossy lake. Or it may depict the scene at a certain time of day, thus including some characteristics of a summer mountain landscape at noon but excluding those of the same landscape at sunset. The assembler's initial glimpse at the box's cover guides the entire process of piecing together the puzzle.

> *Meaning, not disconnected facts, is what sane human beings seek, and education is a set of codes for processing raw facts into meaning.*
> *—John Taylor Gatto*

So, too, is the case with middle-level students' first exposure to the concept of life's work. Whatever the "picture" they first "view" of the concept, they will search it for familiar features. They may recognize, for example, that it includes goal-directed behavior, interdependent activity, and intercommunication among its characteristics. They may also notice other features of the concept that they never before associated with the concept, and this too will affect how they later look at each of the individual puzzle pieces.

This initial glimpse at the big picture or initial exposure to the big idea (broad concept) is what helps the learner create meaning from what would otherwise be disconnected facts. It provides an initial code for processing raw facts and opinions into meaning.

Step Two: Relying on Prior Experience to Interpret the Picture

What the puzzle assembler sees upon first looking at the picture on the box will be influenced by his or her previous life experiences. Has he or she ever seen a similar landscape? Does this picture have features in common with other, previous ones? Or is it somehow different? For instance, it may have mountains, sky, and valley trees, but the mountains are smooth, green ones rather than rocky, blue ones. Does he or she know what features or characteristics are typical of a picture of this genre?

Similarly, young adolescents will bring initial impressions or notions about life's work to their first formal educational encounters with the concept. What they have observed their parents referring to as work, for instance, will be influential. Teachers need to understand that young adolescents will have these preconceived and incomplete notions and to ensure that introductory learning activities help the learner "see" a more complete picture.

What big ideas are important to little kids? . . . [T]hat what they are learning isn't idiosyncratic—that there is some system to it all and it's not just raining down on them as they helplessly absorb.
—from an Indiana teacher's letter to John Taylor Gatto

Step Three: Noticing How Small Details and Large Features Interrelate

As the assembler begins fitting individual puzzle pieces together, he or she will typically start by focusing on dominant themes of the puzzle—for example, fluffy, silvery clouds go on one side of the picture; the big stretch of clear blue sky goes elsewhere. The assembler can integrate these subparts into the larger picture, which makes it easier to integrate the smaller details: once the village in the valley is assembled, with its multicolored geometric shapes, it's easier to fill in the surrounding trees, many of which look quite similar at a distance.

In the same way, as young adolescents begin to develop an initial concept of life's work, they will focus on some of its dominant subconcepts, such as communication before they focus on smaller subconcepts, such as messages, transmission, and reception. Larger subconcepts will act as organizing tools for more subtle features and facilitate their integration into the broad concept.

Step Four: Learning to Appreciate the Subtleties

As the assembler begins to piece the puzzle's major features into the larger picture, he or she will recognize and more fully appreciate the picture's subtleties. Let's say that birch trees may appear at one end of the valley while evergreens grow on the opposite side, or the cluster of red barns sits to the left of the valley, while the yellow houses are to the right. The assembler would probably refer back to the picture on the box occasionally to remind himself or herself of how its different features fit together and relate to one another.

Middle-level students must similarly be reminded on a regular basis of how subtle features of a concept relate to the larger, overall idea. This means that teachers need to put what has recently been learned into perspective, tying the new learning back to the old. However, in this case, the old learning—the key concept of life's work—is not discarded, but rather amplified, built upon, and clarified as students learn more about features (characteristics and noncharacteristics) of its subconcepts.

Step Five: Recognizing the Pieces that Don't Fit

To continue with the puzzle metaphor awhile longer, assume for a moment that someone had mixed pieces from another puzzle—a harbor scene—in with those the assembler was using. The assembler would probably be able to remove some of the inappropriate pieces from the collection of correct ones: having seen the picture, he or she could pick out those foreign pieces whose characteristics were different from those that would complete the puzzle. Other pieces would be more difficult to sort out because the differences between the correct and incorrect pieces would be more subtle.

This observation applies as well to a situation in which a young adolescent explores the concept of life's work. Having thought about the concept in broad terms—having gotten the big picture—the middle-level learner would be able to recognize that some major ideas (subconcepts) are not appropriate parts of life's work; he or she would easily recognize that they don't fit into the big picture.

We do not come to understand a subject or master a skill by sticking bits of information to each other. Understanding a subject results from perceiving relationships.
—Renate Nummela Caine and Geoffrey Caine

Step Six: Taking a New Look at the Big Picture

By the time the assembler has pieced most of the puzzle together, his or her appreciation for its details or subtleties would be much fuller than it was when first viewing the picture. If he or she were to try to assemble the puzzle a second time, and if the right and wrong pieces were again mixed together, the assembler would find it easier to identify and remove the wrong ones. Furthermore, the assembler could probably look at each individual piece with a sense of how and why it would fit—or not—into the puzzle. He or she might even be able to describe where the correct individual pieces fit into the picture.

As students develop key concepts, they become increasingly able to integrate new pieces, or subconcepts, into the broad picture. At the same time, as the key concept is more fully developed and the learner understands it better, it becomes easier for him or her to exclude pieces that are not characteristics of the concept and to see that those pieces fit into some other key concept.

Some General Observations on the Process

Although someone could assemble a jigsaw puzzle without seeing the picture on the box cover, it would be more difficult to do so. Without the glance at the big picture and opportunities to recall how its features or subparts relate to the whole, it is more likely the assembler will become frustrated with the task before completing it. Looking at the big picture makes the task easier to accomplish. Furthermore, the more puzzles someone assembles, the better he or she will become at the task.

Without thinking about life's work in broad, conceptual terms, middle-level students may be able to form or develop a reasonably complete concept of it. However, there is greater likelihood that the process will be more difficult, cumbersome, and frustrating and that important characteristics will be missed. The process of forming meaningful concepts, like any other task, becomes easier with practice. While any task, process, or approach may initially seem cumbersome to a person unfamiliar with it, it will become second nature once mastered and used routinely.

The development of key concepts is a lifelong task. The young adolescent will never fully finish assembling his or her mental picture of the key concept "work." It is, however, important for teachers to understand that laying the groundwork for the lifelong process of concept development begins in the middle grades. Preparation for work demands that learners have a concept for work.

Middle-level teachers can design instructional activities that assist young adolescents in the process of forming or developing the key concept of life's work. The nature of the learner, the key concept, and the subconcepts—like the nature of the puzzle assembler, the completed puzzle, and the puzzle's features—will influence how rapidly and meaningfully the concept is developed. This means that concept learning is a complex, evolving process that needs a teacher's careful, consistent attention. Prior to each lesson focusing on a concept, teachers need to rethink their own concept. Furthermore, classroom success will hinge on teacher awareness of each learner's nature (temperament, learning style, developmental stage, etc.) and personal experience.

Sources of Middle-Level Curriculum

The authors of *Exploring Life's Work* contend that these are two major sources of middle-level curriculum:

- concerns or questions of immediate interest to young adolescents and
- the broad goals of K-12 education (preparation for work, lifelong learning, and citizenship).

Student Concerns and Questions

Young adolescents have concerns and questions that derive from their age and natural interests. A sampling of these student concerns follows; these statements were taken from a survey conducted in 1990 as part of the Middle Level Curriculum Project initiated in Wisconsin. (McDonough, et al., 1991.)

- I wonder why I do the things I do.
- I wish I knew when to follow my friends and when to leave them.
- I wonder if I will pass eighth grade and if I'll go through college.
- I wish I knew more about old people and how to help or help take care of them.
- I wish I knew more about teachers and why they want to teach kids like us.
- I wonder if when I grow up my ambitions will be different than they are now.

It is clear even from this brief list that the concerns of middle-level students are complex, indicating deep thinking, curiosity, and concern with themselves, others, and the future. Section 7 of this publication, "Implementing

A good question is never answered. It is not a bolt to be tightened into place but a seed toward the hope of greening the landscape of ideas.
—John Ciardi

a Conceptual Approach to Middle Level Curriculum," suggests a strategy teachers can use to identify student questions and concerns.

The Broad Goals of K-12 Education

This guide focuses on the goal of preparation for work. By the same token, if preparation for citizenship and lifelong learning were also goals of K-12 education, students would need to develop these concepts. These key concepts serve as the "big picture" into which all the pieces—work, citizenship, and lifelong learning—fit or can ultimately be pieced.

Lesson Planning

Teachers can use student concerns and questions and the broad goal of K-12 education, preparation for work, to generate themes that

- provide focus for middle-level curriculum and instruction and
- guide the identification or creation of instructional activities.

Instructional activities the teacher identifies or creates for use are a direct result of the themes chosen for the unit, class, or semester. Figure 1 shows how the themes, student concerns and questions, broad goals of K-12 education, and existing content areas interweave to form an exploratory, conceptual curriculum.

The basic steps teachers would follow to develop lessons (or units) via this approach are quite simple.

> *The best teachers are those who make the fewest pretensions.*
> *—Mortimer Adler*

- The teacher identifies student questions and concerns.
- The teacher uses student interests to determine themes or curriculum and instruction. These themes correspond to concepts subsumed by life's work.
- The teacher selects and creates instructional activities that allow students to explore the issues that concern them and to develop the concept expressed in the curricular theme.

Identifying Student Questions and Concerns

Imagine that a group of middle-level teachers aiming to apply this approach in their classrooms meets to plan curriculum and instruction for the following semester. Their first task, according to the *Exploring Life's Work* model, would be to identify their students' current questions and/or concerns. This can be done formally—through surveying or interviewing students—or informally.

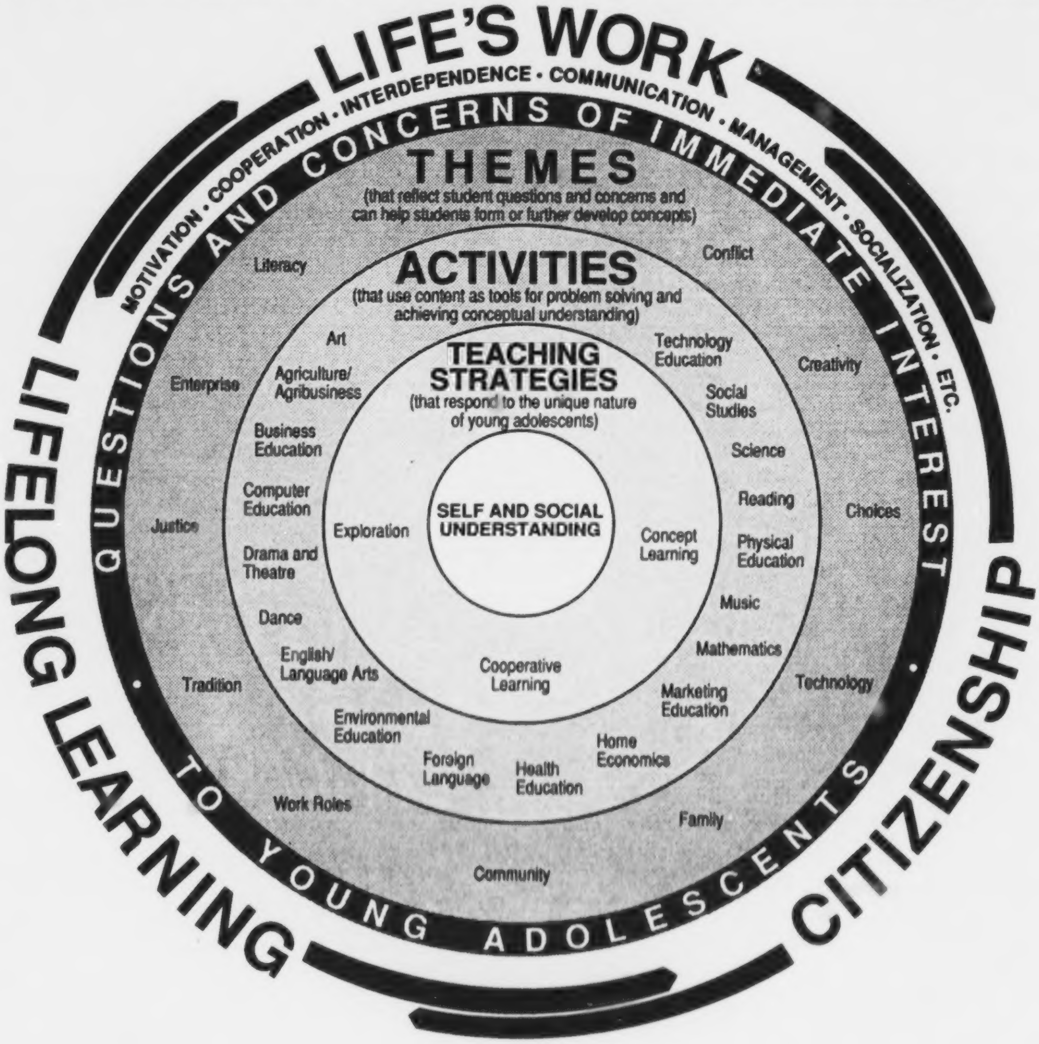
Experienced or not, all teachers can benefit greatly from seeking input from their middle-level students. While less-experienced teachers might not be able to proceed without eliciting students' help for this step, experienced teachers may already have a good sense of what these questions and concerns are; for experienced teachers, this step may confirm their own perceptions. In either case, it is important that teachers seek student input.

Lesson Planning Wheel for an Exploring Life's Work Curriculum

This seven-ringed figure depicts the structure and major parts of an *Exploring Life's Work* curriculum. Elements taken from each of the seven rings may be combined to organize learning for a given day, unit, or semester so that young adolescents may be guided to self and social understanding.

1. The broad goals of K-12 education–which overlap—form the outer ring.
2. Six subconcepts of life's work, as suggested in this guide, appear just inside the life's work goal.
3. The third ring designates student questions and concerns about life's work (and its subconcepts) which, in turn, inspire the themes selected for the classroom.
4. Themes are chosen with an eye to student concerns.
5. Activities, which draw on content-area skills and information, provide students with learning experiences that help them develop conceptual understanding and respond to student questions and concerns.
6. Teaching/learning strategies known to respond to the unique needs of young adolescents, ensure that activities will lead to. . .
7. . . .self and social understanding.

This figure is not a road map: there is no single correct path from one ring to the next. The teacher using an *Exploring Life's Work* approach should use multiple strategies, diverse activities, and numerous themes to achieve the goal of helping students develop a conceptual understanding of life's work.


LIFE'S WORK
MOTIVATION • COOPERATION • INTERDEPENDENCE • COMMUNICATION • MANAGEMENT • SOCIALIZATION • ETC.
QUESTIONS AND CONCERNS OF IMMEDIATE INTEREST TO YOUNG ADOLESCENTS
THEMES
(that reflect student questions and concerns and can help students form or further develop concepts)
Literacy
Conflict
Enterprise
Creativity
Justice
Choices
Tradition
Technology
Work Roles
Family
Community
ACTIVITIES
(that use content as tools for problem solving and achieving conceptual understanding)
Art
Agriculture/ Agribusiness
Business Education
Computer Education
Drama and Theatre
Dance
English/ Language Arts
Environmental Education
Foreign Language
Health Education
Home Economics
Marketing Education
Mathematics
Music
Physical Education
Reading
Science
Social Studies
Technology Education
TEACHING STRATEGIES
(that respond to the unique nature of young adolescents)
Exploration
Concept Learning
Cooperative Learning
SELF AND SOCIAL UNDERSTANDING
LIFELONG LEARNING
CITIZENSHIP

Determining Themes for C & I

Certain themes, resulting from local, regional, national, or international events, will undoubtedly permeate many of students' questions and concerns. Assume, for instance, that the hypothetical group of teachers had found their students were concerned about what they perceive as adults' inability to listen to and accept others' point of view on important issues. This concern, the teachers learned, arose out of students' observations of a local, heated conflict between policymakers and citizens about an issue of great importance to the community. The teachers could determine that "communication" would be one of the semester's themes and would make it a focal point of curriculum and instruction. The theme would heavily influence what these teachers would accomplish in the coming semester.

Contrast this to the traditional middle-level approach to curriculum, in which communication would be recognized as important but covered merely as a lesson or unit in a variety of courses, without any efforts to tie the content back to the broad concept of life's work. In the exploratory, conceptual approach to teaching, curriculum is based, in part, on specific student concerns. Teachers set the stage so students can seek or construct answers to these questions or concerns and put them into some larger conceptual framework. The selection of themes determines the selection of instructional activities and ensures that the activities focus both on student concerns and the goal of exploring life's work.

Selecting and Creating Instructional Activities

The group of teachers in this example would then select or create activities that accomplish two things.

- The activities would address the student concern or question: people's inability to listen to or accept others' point of view.
- The activities would help learners form or develop concepts (such as communication) that are essential parts of life's work and that lead to self and social understanding.

As teachers select or create activities, they must recognize that the full value of this process will not be achieved unless the activities help students develop their understanding of key concepts. These concepts will form the enduring conceptual framework students will use to integrate knowledge throughout their lives. Education that does not use student concerns to develop conceptual understanding will not be adequate for students' needs in their adult work lives.

[N]o single approach to teaching is appropriate in all situations, and consequently, effective teaching requires alternative strategies to accomplish different goals.
—Paul D. Eggen and Donald P. Kauchak

So the teacher who succeeds in having students memorize the "barriers to effective communication" and "the eight steps to successful discourse" in response to their interest in communication will have missed a marvelous, once-in-a-lifetime opportunity to open the learners' minds to the large concept of communication and how it relates to life's work. Concept exploration could have permitted the same teacher to help his or her students develop a broader, more meaningful concept of communication and a richer understanding of the role of communication in any of life's many types of work. At the same time, if activities that teach about the concept (theme) of communication fail to lead students into an exploration of the concept's important properties or characteristics—such as communications technology, communication in the family, and so forth—the curricular theme will not have been used to its full advantage.

Student Outcomes

Determining whether or not students have achieved the intended outcomes of an *Exploring Life's Work*-based curriculum may require the use of new and somewhat unique assessment strategies. Complete coverage of the varous ways learning outcomes ought to be measured is well beyond the scope of this guide. In brief, assessment will need to include three dimensions, the second and third of which have rarely been the focus of middle-level curriculum:

- assessment for knowledge of fact,
- assessment for concept attainment, and
- assessment for generalizable skills.

In order to meet the expressed need for the development of thinking skills, students need practice throughout their schooling, just as practice is required to learn any skill.
—Paul D. Eggen and Donald P. Kauchak

Assessment for knowledge of fact. This is the area which middle-level curriculum most commonly develops. It is assumed that teachers will have previously developed a practical working knowledge of how to assess conventional fact and information learning. Such assessment essentially evaluates memory tasks: the learner is required to recall, recognize, or reproduce facts or information as they were taught them.

Assessment for concept attainment. Concept learning has not occurred until an abstraction has been formed and students are capable of generalizing the principle. This means that they must know how to identify examples and nonexamples of a given concept and determine how the concept in question is like, subsumes, or is subsumed by other concepts.

While this type of learning is different than fact learning—and its assessment also differs—there is still a danger that assessment may focus on whether or not students have attained concepts, rather than their abilities to use those concept for higher-order thinking. Past Wisconsin Department of Public Instruction curriculum guides have included examples of objectives designed to identify whether students possess a reasonably accurate sense of a concept. Examples of these appear below, as well as their related assessment items.

- *A Guide to Curriculum Planning in Science.* Under the concept "organization" the student shall understand that related systems within systems comprise the universe. (p. 130.)

  Assessment: Build a system of simple machines that work together to lift a weight. Involve as many machines as possible. Explain why this system represents an example of organization.
- *A Guide to Curriculum Planning in Social Studies.* Understand that various people see the world in different ways or from different frames of reference. (pp. 64, 67.)

  Assessment: Describe how the United States addresses problems that have emerged because of its diverse population.

- *A Guide to Curriculum Planning in Art Education.* Develop the ability to interpret ways in which visual forms in the environment reflect social values. (p. 34.)

Describe ways in which selected visual images aim to manipulate behavior.

Assessment for generalizable skills. Determining that students have formed or developed a relatively accurate and complete concept is not sufficient to ensure they can necessarily apply that concept in other settings—in or out of school. Curriculum should aim to make content and concepts the vehicle for, not the focus of, young adolescents' learning. It is vitally important that assessment determine whether, and to what extent, students are developing the skills they will need to continue concept learning and exploration in other settings.

Sample Higher-Order Outcomes

The Department of Public Instruction's *Guide to Curriculum Planning in Home Economics* includes the following "new ideas for student evaluation" as a basis for determining the extent to which these higher-order objectives are being achieved:

- gathering, verifying, and interpreting data
- organizing information
- making hypotheses
- drawing conclusions
- identifying concept attributes, examples, and nonexamples
- integrating concept attributes and exploring concepts
- assessing assumptions and soundness in language and argument
- recognizing consequences of actions
- using language
- posing questions
- differentiating between types of statements and types of questions
- formulating problem statements

Separating higher-order skills from content is impossible, so measuring thinking will always involve measurement of content mastery. However, the reverse is not true. Teachers will need to evaluate their assessment items to be sure that they are evaluating both thinking skills and content. (Eggen and Kauchak, p. 97.)

> *The assessment system should reflect a clear vision for schooling that emphasizes student thinking and reasoning, not rote learning and basic skills.*
> *—Carnegie Corporation of New York*

These are the same "higher-level skills" education critics maintain students are not learning. Whle the higher-order skills listed above cannot be separated from content, they will only be achieved if the teacher

- has **identified** and planned for them in each lesson,
- has **implemented** learning activities that have these outcomes as their focus, and
- has **designed** evaluation items to reflect these specific learning outcomes.

Sample Objectives for Higher Order Outcomes

The following list of sample objectives is designed to help the curriculum planner identify some of the higher order outcomes that are a necessary part of preparation for work.

Students will become skilled in

- realizing their innate potential as contributing members of the community and society.
- working cooperatively in groups toward a common end.
- identifying concepts that will influence them throughout life. This will be accomplished through, but not limited to
  — differentiating between one concept and other.
  — identifying common properties between concepts.
  — relating points to one another.
- posing questions to further their understanding of concepts (such as "work," "citizenship," or "lifelong learning").
- exploring the multiple meanings inherent in everyday situations and understanding that others may see the same situation in a very different—but no less valid—light.
- constructing dialogue that can lead to learning about other individuals' concepts.
- conducting an independent concept analysis, including identifying all of its parts:
  — characteristics
  — noncharacteristics
  — examples
  — nonexamples
  — definition
- transferring classroom learning to job sites, family interactions, social situations, and community settings. This process of transferring a concept will include the consequences of existing and new concepts.
- thinking inductively and deductively, underscored by the fact that classroom activities are tied to concepts and concepts to everyday situations.
- recognizing the value of thinking processes in lifelong planning and learning.

[I]f the curriculum is to be authentically engaging, then the actual themes used in any particular school must reflect as closely as possible the concerns of early adolescents in that school.
—James A. Beane

Conclusion

It is important for teachers to interrelate student questions and concerns with concepts. To recall the puzzle metaphor used earlier, a failure to ground student-based learning in concept development would be like focusing on an individual puzzle piece without considering how it fits into the big picture. While exploring student concerns without concept development would have some limited value to students, the absence of the larger concept means it probably would not produce the desired, enduring benefit of helping students see how their concerns relate to very real, very important, day-to-day life's work issues. Should a similar question or concern again arise, the students would be likely to approach it as an isolated issue, unrelated to any other concern, concept, or context.

Helping students form or develop the subconcepts subsumed by "life's work" can be compared to helping them assemble the major features of one portion of a puzzle (such as the fluffy, bright clouds or the cluster of birch trees) so they may integrate it into the bigger picture. Once students develop a basic notion of motivation, interdependence, or communication, (having assembled these "puzzle portions" out of "individual pieces") it will not only clarify how the subconcepts relate to life's work, it will make the big picture of life's work that much more detailed.

The following sections of this guide discuss the four features of effective middle-level curriculum and instruction in greater detail and describes how each feature interrelates with the others.

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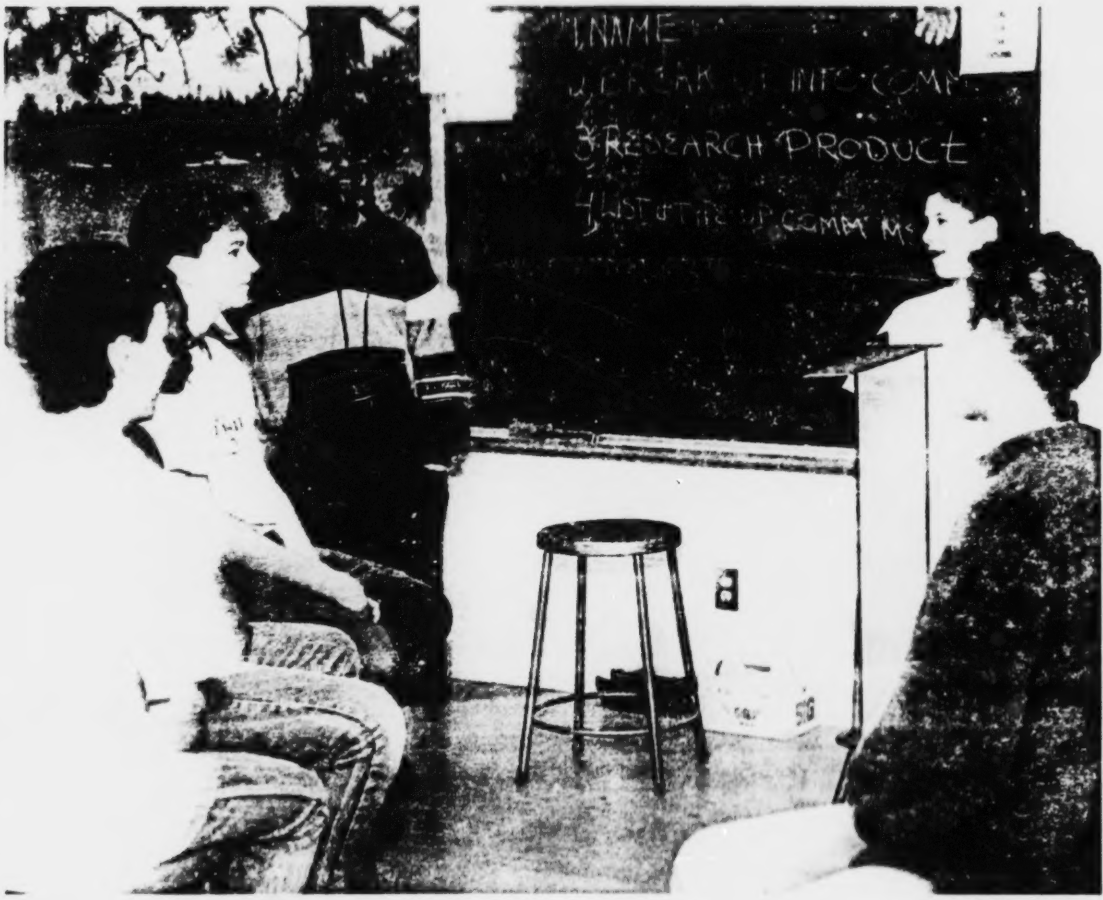
Cooperative Group Learning

The Advantages of Cooperative Group Learning
Understanding and Implementing Cooperative Groups
Setting the Stage for Success
The Role of the Teacher
Lesson Closure: Analyzing the Group's Accomplishments
Conclusion
References



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The Advantages of Cooperative Group Learning

This section provides an overview of cooperative group learning, a learning strategy that promotes concept formation, encourages exploration, improves achievement, and responds to the social, emotional, and intellectual needs of the young adolescent. Cooperative group learning is a complex strategy that requires both students and teachers to learn and practice new behaviors. While working in small groups has been a traditional part of many classrooms, cooperative group learning is different and requires ongoing professional development on the part of the teacher if it is to succeed.

Five qualities typify the interactions in successful cooperative learning groups.

Cooperative learning procedures may be used successfully with any type of academic task, although they are most successful when conceptual learning is required.
—David W. Johnson
Walter T. Johnson

Positive interdependence. Teamwork and cooperative skills will prove to be the hallmarks of paid and unpaid work in the twenty-first century yet are among the least developed skills in the traditional middle school curriculum. Positive interdependence means working together without undue individualism nor a dependence on several group members to do others' work. Middle-school learners are energetic individuals actively seeking a sense of identity. Their tremendous energy can fuel dynamic social and group interactions if carefully channeled by the teacher.

The positive interdependence fostered by cooperative group learning will help teach middle-school students that, in any endeavor, each individual's contribution to the group is an essential part of the group's success. Cooperative learning groups can provide the laboratory for this understanding. And, while students will reach different levels of achievement and will have varying interests, the cooperative learning group can provide a place where these differences can produce complex and positive interactions.

Face-to-face interaction. Much of the traditional middle-school curriculum takes place at emotional long distance: the classroom is modelled on the high school classroom, in which student-teacher interactions often are mediated by written work and limited to teachers' assignment and evaluation of it. Furthermore, student-student interactions often are limited to social contacts outside of the classroom, and face-to-face contact in the classroom is discouraged. Cooperative group learning gives students and teachers the opportunity to interact in a way that more closely resembles useful, real-world communication.

Individual accountability. A classroom lacking face-to-face interaction and positive interdependence encourages students to find a comfortable level of participation and remain at that level. This can be especially detrimental to middle-school students: just at the point in their development where they can be motivated to explore ever-broadening horizons, they may instead settle for an easier but limiting option. In the traditional middle-school classroom, it is easy for some students to produce at a level well beneath their abilities. By emphasizing individual accountability to one's peers and oneself, cooperative group learning provides a setting where students are motivated to their own highest personal levels of accomplishment and where they can be encouraged to take risks to that end.

Interpersonal and small group skills. Most of life's work involves these skills, yet the traditional middle-school curriculum does not provide a solid grounding in them. Middle-level learners need to begin developing these skills for future success. The cooperative learning group makes available a comfortable setting for exploration into the complex social skills that students will need throughout life.

Analysis of the group's accomplishments. It is crucial that students conclude any cooperative group activity with an analysis of how well they worked together. The amount of time required and the depth of focus can vary. Self-evaluation is a crucial skill that underscores students' responsibility to themselves and others. It also helps them set and achieve goals and learn to give helpful, supportive feedback to others. The traditional middle-school curriculum reserves this feedback function solely for the teacher, who evaluates individual performance for grades without necessarily providing other opportunities for evaluation.

These five qualities will be developed by cooperative group learning. At the same time, cooperative group learning requires that the stage be set so these qualities can develop.

The next portion of this chapter describes the features of a cooperative learning group, gives directions for setting the stage for cooperative learning, discusses the role of the teacher, offers suggestions for bringing a lesson to closure, and includes a sample lesson. Ample material on cooperative group learning is available.

One can acquire
everything in
solitude—except
character.
—Henri Beyle

Successful cooperative group learning requires the following elements:

- The teacher must carefully select each group's members for diversity.
- Cooperative learning groups function best when the stage is set to facilitate their success in terms of classroom arrangement, behavior expectations, and learning objectives.
- The teacher must assume the roles of monitor, intervener, and evaluator.
- Lesson completion must be planned.

Understanding and Implementing Cooperative Groups

A successful cooperative learning group is heterogeneous, containing a mixture of high-, medium-, and low- achieving students of both sexes, diverse cultural groups, and varying motivational levels. The teacher should select the groups with heterogeneity in mind, taking care to plan the selection carefully. Diverse groups lend themselves to interdependence and cooperative learning better than homogeneous ones by ensuring a variety of viewpoints among the students. The small groups of the traditional middle-school curriculum did not plan for and encourage this diversity. Traditional groups had other shortcomings as well.

Traditional Versus Cooperative Groups

According to Johnson, Johnson, and Halubec (1988), numerous other differences exist between traditional small learning groups and cooperative learning groups.

Interpersonal and small group skills. In traditional small groups, teachers assumed that interpersonal and small group skills were being learned even though no effort was made to teach them directly. By contrast, skills that make collaboration possible—such as leadership, communication, conflict management, and building trust—are directly taught in cooperative learning groups.

Role of the teacher. In traditional small groups, the teachers' role was minimal. They engaged in little intervention with the students and did not observe the groups in a collaborative manner. Cooperative group learning involves teachers directly. As students work together, the teacher observes their interactions, analyzes problems, and provides feedback.

Students in conventional classroom settings have few opportunities to build skills of cooperation, compromise, and group decision making.
—Christopher Dede

Focus on process *and* product. Traditional learning groups defined success as the completion of the assignment. The teacher's focus solely on the product of the group's interaction ensured that students would likewise focus on the product—and the grade they received. In cooperative groups, both the process of working together *and* the product of that work are important. Therefore, time is set aside for students to analyze how effectively they are working together. This ability to analyze the group's efforts acts as a key to achieving the level of social skills necessary to later success.

Designation of leadership. Traditional learning groups usually have a designated leader who often carries the responsibility for seeing that the group's work is finished or even for finishing it in the case of groups with a low level of motivation. In cooperative learning groups, students share different parts of the leadership role and therefore the responsibility for the group's process and product.

Further comparisons of traditional and cooperative group learning appear in the work of Johnson, Johnson, and Halubec (1988). Consult the references portion of this chapter for more information.

Introducing Cooperative Group Learning

Teachers who wish to introduce cooperative group learning in their classrooms need to consider a number of points.

Keep groups small. The groups should be of a size and composition that encourages this type of learning. Teachers can ensure this by assigning groups. While students learn the skills necessary to facilitate cooperation, two or three students per group can be ideal. So, once students in a particular classroom have gained the necessary skills, the teacher can assign groups of up to six students. Six students tends to be the maximum for these groups.

Go gradually. Cooperative group learning should be integrated into the classroom in a gradual manner. The teacher can begin by offering a single lesson in this way. Then, he or she can include a cooperative group learning exercise on a weekly, and later a daily basis. In this way, teacher and students alike become accustomed to the new way of learning without the discomfort or confusion an abrupt shift in methodology can bring.

Design activities carefully. A well-designed cooperative learning activity cannot be completed without cooperative effort, and the teacher who wants to use this approach will find it is important to ensure that planned activity indeed cannot succeed without cooperation. A simple example is that of a group activity requiring three students to unload from a shipping pallet and neatly store a ton of flour. This activity could take place in a variety of ways. If the flour were stored in 100-pound sacks, the activity would *require* cooperative effort. If it were packaged in standard five-pound bags, one person could accomplish the task without necessarily needing to rely on others.

Understand the different roles for teachers. Teachers need to familiarize themselves with their new roles before shifting to cooperative group learning. In the early stages of implementing it, the teacher needs to observe students while they are working, intervening with questions where necessary. If it appears that one or several students are contributing or helping other group members, the teacher can ask those individuals for an answer or response to another student's question or concern. In this way, students with low motivation to participate can be encouraged to be more responsible group members in a positive matter. More information on the teacher's roles appears on page 36.

Keep a positive outlook. It is important for teachers to maintain a positive attitude, recognizing and acknowledging students' positive behaviors, as well as focusing on instances where students are not meeting expectations. It is also important to give the students the opportunity to reflect upon their ability to work together after each and every cooperative group activity. This self-evaluation is an important skill that teachers can encourage in the earliest stages of implementing cooperative group learning by asking questions such as, "What did you do today that was evidence of cooperative group effort?" or "What could you do better in the next group effort?"

We teachers can only help the work going on, as servants wait upon a master.
—Maria Montessori

Be frank abut expectations. Finally, teachers can help students in cooperative learning groups stay on task by setting up and sharing a clear set of expectations for group behavior. Assigning students specific roles within the group makes it easier for them to understand and practice it. For instance, one student might act as recorder, noting the group's progress and jotting down ideas as they occur. Another might be the encourager, offering positive support whenever the group or its individuals aren't progressing as they might like and helping all students participate. Other students could be readers, checkers, and so forth.

Setting the Stage for Success

Cooperative group learning will succeed only if teachers set the stage for positive interdependence, face-to-face interaction, personal accountability, interpersonal and small group skills, and analysis of the group's accomplishments. By carefully arranging the room, giving instructions that promote interdependence, presenting explicit expectations for student behavior, and identifying learning objectives, teachers increase the likelihood that cooperative group learning will work for their students.

Room Arrangement

The members of a cooperative group should be seated close enough to share materials easily, maintain eye contact with each other, and carry on a quiet discussion. Seating students in small circles facilitates the face-to-face interaction conducive to cooperative group learning, while placing students at tables tends to obstruct their view of shared materials and discourage group discussion. The teacher can observe whether groups are seated too closely to each other or if group members are too far apart; students will find interaction difficult or groups will disrupt each other if the seating arrangement is not optimum.

Instructions that Promote Interdependence

The manner in which teachers provide instruction to cooperative learning groups can encourage or hinder positive interdependence and personal accountability. Students who have no experience with cooperative learning groups will need their teacher to provide guidance and structure early in the class. The learning activity must be set up so that each member of the group has an important part to play and so the group's success in the activity depends on each individual's success.

For example, in a lesson that involves learning new information, each group member could receive a set of readings or resource materials representing part of what the entire group must learn. Each student would be responsible for learning his or her own material but also for reporting it to the group so that the other students can learn it too. This involves skills such as answering questions, organizing facts and ideas, summarizing, creating examples, verbal and nonverbal communication, and checking for understanding.

If we would seek for one word that describes society better than any other, the word is cooperation.
—Ashley Montagu

Behavioral Expectations

Students working in cooperative learning groups need to realize that group work does not absolve them of responsibility for their own actions. Teachers can help students stay on task by establishing guidelines for group work, presenting basic behaviors and expectations in an explicit and forthright manner. The success of cooperative group learning can be limited by the assumption that students already know which behaviors are expected of them.

When first attempting to work with cooperative learning groups, the teacher should present these guidelines, understanding that further explanation will be necessary. Students cannot absorb and successfully put into action more than a few guidelines at a time; one or two per session may be their limit. These guidelines can range from simple ones, such as "Stay with your group and do not wander around the classroom," to more complex ones, such as "Do not change your mind unless you are persuaded to do so by a strong, logical argument." Students with no cooperative group experience will need to learn the simple guidelines before being able to absorb the more complex ones.

The need to provide these behavioral expectations also apply to the actual content to be learned in the group. For instance, it is crucial that students understand that each group member learn his or her assigned materials and make sure other group members also learn them. Furthermore, it is important that teachers explain to students why they are being asked to do these tasks.

In establishing guidelines for behavior, teachers can maintain a positive tone that encourages cooperation and interdependence. Criticism, negative comments, or a focus on what was done wrong does not encourage these qualities. Students need praise when they meet the instructor's and each other's expectations and reassurance when they do not. Teachers will find themselves answering numerous questions about collaborative skills and should remember that it takes time to impart and to learn these skills. Finally, teachers need to offer plenty of examples of how and when particular students or groups succeeded in cooperative learning. By seeing their peers succeed and sharing that success, students will find it easier and more rewarding to learn the cooperative group process.

Teachers can help students recognize what they don't know, obtain the knowledge and skills they lack, and . . . appreciate the interrelatedness of various disciplines.
—Thomas R. Owens

Two Types of Learning Objectives

Teachers need to identify two types of objectives before teaching an activity via cooperative group learning: the academic objective and the collaborative skills objective. These two types correspond roughly to the product of the activity and the process of learning that unfolds. Students need to know their evaluation will be based both on the "end" or product of their efforts and the "means" or collaborative process that makes it possible. Few objectives will be exclusively "academic" or "collaborative" when concept learning is a major goal of instruction. While these will overlap, it is necessary to be aware of the two types and to ensure that both have been considered and included in cooperative group learning activities. Both develop highly desirable learning outcomes.

The academic objective involves the content or concept to be learned or developed and the level of student attainment desired. An example of an academic objective would be "to explore how skill attainment and education are related to career choice," or "to investigate the relationship between traditions and culture."

The collaborative skills objective designates which collaborative skills will be focused upon in the course of the lesson. An example of a collaborative skills objective would be "to learn to use brainstorming techniques" or "to form conclusions."

The Role of the Teacher

Teachers cannot assume that cooperation and interdependence will automatically happen in small groups simply because the stage has been set. The teacher's role is another way in which cooperative group learning differs from traditional small group learning at the middle school level. This role includes three major tasks: monitoring group activity, intervening in a positive, helpful manner to facilitate the group's work, and evaluating the group's progress and accomplishments.

Teacher as Monitor

In this capacity, the teacher takes an active role by clarifying instructions, reviewing important procedures, answering questions, and so forth. In a cooperative group learning situation, much of the teacher's time is spent moving from group to group, observing students' interactions with each other, and analyzing student progress or difficulties. Formal observations are recommended because they provide concrete data that can later be used in evaluating students' progress in developing collaborative skills. So much will be going on in each group that a teacher will find a formal process helps focus his or her attention on the most critical or desirable skills.

Until the teacher acquires practice monitoring collaborative learning situations, he or she should develop skills by evaluating one or two types of behavior at a time. For instance, are all group members contributing ideas? Are questions a routine part of the group's interactions? Some teachers have reported success with training students to be observers. These student observers need to be experienced and practiced with exercising group skills.

Teaching is an art in the sense that teachers, like painters, composers, actresses, and dancers, make judgments based largely on qualities that unfold during the course of the action.
—Elliot Eisner

The following checklist may help teachers who are learning to monitor cooperative learning groups:

- Do students understand the purpose of lesson? If not, some basic explanation of it is in order.
- Have students shown evidence of accepting positive interdependence? If not, they may not understand the nature of positive interdependence or may need formal practice in exercising it.
- Are students exhibiting new behaviors that contribute to collaborative efforts? If not, they may need to learn them through direct instruction.
- Do the students know how to go about their learning task? If not, the teacher may need to propose strategies to help them.
- Do students understand the specific criteria their teacher is using to evaluate them? If not, they need to be made aware of how they are being evaluated.

Teacher as Intervener

A teacher may choose to intervene in a group's activities or discussion to reinforce positive skill development and/or to suggest more effective behaviors or new skills for working together. In general, teachers should limit the amount of intervention they exercise: it limits the group's interactions, thwarts the development of problem solving strategies, and, in excess, can make groups or individual students self-conscious. A good rule of thumb for this facet of the teacher's role is that a choice to intervene does not imply solving problems or answering questions for the group. The teacher should pose questions, offer comments, and provide feedback that directs the problem back to the group for its solution. Table 1 suggests ways teachers can model behaviors that nurture the development of collaborative skills.

Students best learn collaborative skills in situations where they need them, and cooperative group learning provides a rich context for encouraging this need. Activities need to be designed so they result in relating the skill developed in class to key or major concepts like life's work.

Instruction in exemplary middle grades schools reflects a balance of . . . learning by doing, demonstration, individual assignments, small work-groups, and lectures. Teachers mix concrete, semi-concrete, and abstract learning activities.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Teacher as Evaluator

Evaluating a cooperative learning group's accomplishments is based both on academic and collaborative skill achievement, and it is important for students to realize that they will be held accountable for both. Academic achievement may be measured by the product that resulted from the group's work (a report, a display, answers to questions, quizzes, etc.) and by the conceptual understanding demonstrated by each individual in the group (in assignments, comments, etc.).

Teachers who are learning to evaluate a cooperative group's work should bear in mind that the cooperative learning group has two goals.

- The group and each of its members must accomplish the learning task successfully.
- The group must build and maintain collaborative skills in the course of its cooperative work.

Learning groups that are simply task oriented and that overlook the importance of collaborative skills fall outside of the approach advocated in this guide.

At the end of the period or activity, students should be able to produce an overview and summary of what they achieved both academically and collaboratively. This gives students the opportunity to ask questions that arose during the lesson and to practice important information skills such as recalling events, summarizing them, evaluating them, drawing conclusions about experiences, and expressing new ideas.

Table 1

Behaviors that Nurture the Development of Collaborative Skills

Teachers can model or directly instruct students in behaviors that nurture and facilitate the development of collaborative skills. Among these behaviors are the following. Listed next to each behavior are several possible formulas for expressing or encouraging it.

To nurture this skill . . .	**. . . try this formula**
contributing ideas	I think _____ because _____. I've always understood that to mean _____.
asking questions	Do you mean _____? Are there other reasons you think that _____? What do you think about that?
active listening	I think I heard you say that _____. Is that what you meant? Please say that again so I'm sure I heard you correctly. Is that another way of saying _____?
expressing support for and acceptance of ideas	You really helped me understand when you _____. That's the best description I've heard of _____. Good idea!
expressing warmth toward and liking of group members and the group	I really admire your ability to _____. I think this group did a terrific job of _____. You know, I enjoy it when you _____.
encouraging all members to participate	What do you think about that, (individual's name)? This sounds like it's related to what (individual's name) said. What does (he or she) think? Can you think of a different example than the one already stated?
summarizing	I heard you make these major points: _____. What would you say are the major points of what (individual's name or the group) said?
checking for understanding	Were you suggesting that _____? Did I hear you say that _____?
relieving tension with humor	[This one has to be especially carefully presented...it can't make any student or student's difficulty the butt of the joke.]
giving direction to the group's work	I think it would be a bit more useful if we _____. You know, we haven't tried to _____. How did the group decide on these steps (actions, strategies, conclusions)?

A discussion of how to systematically observe cooperative groups is included in *Learning Together and Alone* by Johnson and Johnson (1987).

Lesson Closure: Analyzing the Group's Accomplishments

Feedback on how the group functions (collaborative objective) needs to be approached as seriously as accomplishing the academic objective or task. Group members are engaged in feedback when they reflect on how well their group is functioning and how the group's functioning could be made more effective. Therefore, whenever a teacher uses cooperative groups, it's important to make an opportunity for students to process their observations with the group.

Plan class time to discuss how well the groups functioned, what was done well, and what needs improvement. A process of debriefing on the group's work is also necessary. Adequate time for students to review the quality of their recent attempts at collaboration will enable them to be more effective the next day. It has been demonstrated that students do not learn from experiences they do not interpret or reflect on.

Teaching students to analyze and evaluate the quality and effectiveness of their group interactions is an important part of cooperative group learning. This process is referred to as feedback. It may take different formats, amounts of time, and commitments of energy to accomplish this, but it is crucial that collaborative activities be closed with some type of analysis of students' work together.

Sometimes reflection on how well a group worked together will be thorough, focus on various details, and take considerable time. At other times it will be general, broad in scope, and brief in duration. Teachers planning lesson closure may choose to set aside ten minutes at the end of each group session for immediate reflection leading to feedback on the completed activity or to reserve a longer period of time once per week.

Appropriate programs must take into account young adolescents' needs for social interaction with their peers and adults and for meaningful participation in their community.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Johnson and Johnson (1987) have identified the following procedures for helping teachers conduct what they refer to as *group processing*:

- The teacher decides which skills and behaviors will be emphasized in a cooperative group activity and then constructs a learning activity to impart them. The students will need to be apprised of these skills and behaviors.
- The teacher draws up a work plan for each group, appointing observers, recorders, and so forth.
- Student observers will need observation forms that indicate in concrete, specific terms the behaviors and interactions they will be looking for.
- The teacher observes interactions and intervenes where necessary to help groups or individuals over difficult spots.
- At the close of the lesson, group members assess how well they performed the collaborative skills required by the lesson and how long they sustained the collaboration.
- Student observers report to their respective groups the results of their observation. Group members report to each other their own impressions of how the group and its individuals behaved, then reflect upon and analyze the effectiveness of their behavior by comparing the observer's version with their own impressions.
- Group members compare their own collaborative skills performance to the expectations set up by the teacher at the beginning of the class. This

helps to reinforce appropriate skill use among those who use the skills frequently and to teach appropriate skill use to those who lack it.

- Group members set and announce goals for the next group session's collaborative goals.

Teachers who aim to teach with cooperative learning groups may find that students do not have a sense of how specific to make their analysis of their group's work. For instance, a group might conclude "We did O.K. today" without providing examples or details to substantiate their conclusion. This provides the teacher with the opportunity to teach a lesson about the importance of offering evidence to support an assertion—an important lesson with positive consequences that reach far beyond the group's analysis of its work in the lesson.

Another common problem is that, since this evaluation often takes place at the end of the class period, students may turn in messy, incomplete written reports summarizing how well their group did. The teacher can have group members read and sign each other's feedback reports to highlight students' perception that this is an important portion of their work together. Evaluation can be based, in part, on the extent to which group members share an understanding of the group's strengths and shortcomings. Or, group members can be required to complete a checklist and present their responses to the group and defend them. In any case, the teacher should be sure to leave enough time for a meaningful, substantive analysis that permits students to review and assess their accomplishments.

Conclusion

Cooperative learning groups provide a tremendously valuable setting for helping students develop academic and collaborative concepts and skills. There is no better method for concept development. These groups possess numerous characteristics that successfully accommodate the intellectual, social, emotional, and physical characteristics of the young adolescent. Providing effective cooperative group learning opportunities requires training, skill development, and practice on the part of teachers. Experts in the field of cooperative group learning offer nationwide teacher training in these methods. And the cooperative learning groups themselves provide limitless opportunities for skill development and practice.

References

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Johnson, David W., Roger T. Johnson, and Edythe Johnson Holubec. *Cooperation in the Classroom.* Revised ed. Edina, MN: Interaction Book Co., 1988.

Cooperative Group Learning

Middle school teacher Sherill Lund wanted to provide her sixth-grade students with a way to examine their own notions of the meaning of work and investigate other people's as well. She had read and heard about cooperative group learning, concept learning, and exploratory learning, and decided that these might provide her students with an excellent way to explore work. She concluded that a cooperative group learning activity would be the best way to ease her students into a more responsible, involved approach to their learning about this important concept. This activity would involve preparing and administering information-gathering interviews.

Preparation and Setup

Since she planned to use the cooperative learning activity first thing Monday morning, Ms. Lund used class time on Friday afternoon to tell students about Monday's lesson plan. She discussed the ground rules for cooperative group learning, described the behavior she would expect from the students, and had the students help her rearrange the classroom to accommodate the cooperative situation.

Part of her preparation for this lesson involved sorting her 24 students into three categories: high, medium, and low achievers. She assigned one student from each of the three categories to one of eight cooperative learning groups, taking care to ensure that groups were composed of a mixture of genders and ethnic/racial backgrounds.

Orientation and Introduction

When Ms. Lund assigned her students to the cooperative groups on Monday morning, she found them unusually boisterous as they moved into the new seating arrangement. She interpreted this as a positive opportunity on two counts. First, she realized it would take students a few minutes to get accustomed to their assigned work groups but that their energies were high, a situation on which she might be able to capitalize. Second, she used humor to remind students that their rowdiness was an excellent example of the type of behavior she had presented on Friday as an example of unfocused behavior.

Once the students had calmed down, she reviewed the behavior expectations once again, then shared her academic and collaborative learning objectives. The academic skills objective was to have each group member responsible for conducting information-gathering interviews and contributing information to a group report. The collaborative skills objective included three *interpersonal and small group skills*: assisting each other in staying on task, encouraging participation, and asking questions to clarify ideas and meaning.

Introductory Activity

Ms. Lund delivered an introductory activity to the entire class consisting of video segments showing people engaged in a variety of activities. She asked students to indicate in their groups which people were working, which weren't, and on what basis individuals made this judgment. Her aim was to help her students realize that there exist many different and valid interpretations of the concept of "work."

She then provided the students with a set of instructions to help them develop a survey to use in their interviews and to choose respondents. She structured *positive interdepen-*

dence into the activity by requiring each group to agree on which questions to ask, leaving the selection of respondents up to each group, and assigning a role to each member of the group. For this lesson she selected the roles.

- A checker would be responsible for making sure the group stayed on task.
- An encourager would help draw all group members into participation.
- A questioner would ask questions that would move the lesson along, but would require responses other than "yes" or "no."

She had previously included in each packet of work materials a list of short, effective, nonthreatening statements to help students understand and recognize appropriate and inappropriate remarks for each role.

Cooperative Group Activity

In her role as monitor, Ms. Lund was surprised at the amount of *face-to-face interaction* between students that resulted from her attempt to build positive interdependence into the group process. In general, students enthusiastically assisted and encouraged each other's efforts.

One group seemed to get stuck frequently, and its members seemed to lack the interpersonal skills necessary to interact well. She observed this group and noticed that the questioner remained silent and the encourager didn't try to draw the questioner into the lesson. She decided to slip into her role as *intervener*, and suggested that the group re-assign the role of questioner. The group did, and their interaction went well after that. However, Ms. Lund suddenly realized that she should have intervened just enough to help the group solve its problem, rather than solving the problem for it.

As she moved around the classroom, *monitoring* each group's work and deciding on ways to intervene appropriately, she made mental notes of instances where her behavior expectations were not being met or were being met better than she expected.

It became apparent to Ms. Lund that she could easily check for *individual accountability* by asking each member of the group to give examples from the categories listed on their individual work sheets. These work sheets asked the group to include on its survey questions about the respondent's background, examples of the type of work done by the respondent throughout his or her life, and the respondent's projections as to what work he or she expected to do in the future. Another method of assessing accountability she used was asking students to turn in their individual work sheets with a sample of the group's survey.

Lesson Closure

Ms. Lund set aside 15 minutes at the end of the class for each group to *analyze its own efforts*. She asked them these two questions:

- What did each group member do that helped the group complete its work?
- What could each group member do to improve his or her efforts on the following day?

Some groups were confident they had no room for improvement, and Ms. Lund viewed this as an opportunity to teach them, in subsequent cooperative group activities, ways that they might improve.

In her role as *evaluator*, Ms. Lund found she had provided herself ample means to evaluate the extent of her students' success. To measure their success with the lesson's academic objectives, she could review the questions each student generated and the survey notes each kept. To consider how well they met her behavior expectations, she recalled her observations as she monitored the groups. Finally, the groups' interactions provided her the basis for *evaluating their collaborative*-skills objectives. Although she wasn't completely satisfied with the collaborative skill outcomes, she recognized that social skills and cooperative group skills took time to learn and could form the emphasis for future cooperative learning group activities.

One of the many things Ms. Lund learned in this activity was that she herself could use further training in cooperative learning. She noted on her personal calendar to enroll in a course or workshop on the topic. She also made a note to ask other teachers whether they had used the method, to see if she might collaborate on ideas for future cooperative group learning experiences. It was clear that her students enjoyed the method and met or exceeded her academic objectives, and she wondered how many other applications might be available for this method.

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BEST

The Potential of Exploratory Learning

This section focuses on the ways in which this guide's authors believe exploratory learning can contribute to middle-level education and, more specifically, what is involved in exploring life's work. While there seems to be a lack of consensus among educators as to what exploration means, some middle-level educators maintain that exploration is "the principal concept which distinguishes middle-school curriculum from the more traditional junior high curriculum" (Spencer, 1987). A review of the purposes and aims of exploration in the past can help middle-school curriculum planners better understand what exploration is, our ought to be, in a contemporary middle school.

Changes in the Notion of Exploration

Sensitivity to the developmental needs of young adolescents should result in a holistic approach that encourages exploration and does not narrow options.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Exploration has been an aim or function of junior high schools ever since the first ones were started around the beginning of the twentieth century. The *Cardinal Principles of Secondary Education*, published in 1918, suggests that "In the junior period [of secondary school] emphasis should be placed upon the attempt to help the pupil explore his own aptitudes and to make at least provisional choice about the kinds of work to which he shall devote himself." Even at this early stage, exploration is seen as a means for placing students on an academic or vocational educational path.

In the early 1900s exploration involved a relatively straightforward examination of nonacademic subjects such as home economics, industrial arts, music, and art. Exploration was designed to permit students to examine or appraise the form, extent, significance, worth, value, or merit of these "nonacademic" subjects through exploratory courses, mini-courses, or activity periods. These experiences were typically hands-on in nature and were intended to help students test their likes, dislikes, interests, and aptitudes.

During the early part of the twentieth century, the nature of industry and the paid workplace made it possible for schools to offer and students to receive a fairly comprehensive examination, appraisal, and comparison of the nonmanagerial work being performed at that time. Junior high school exploratory coursework could amply introduce students to the world of work. It was reasonable to expect most students to choose an occupational goal upon completing junior high school. And, for the majority of the population, junior high school represented the culmination of formal education.

Changes in the Nature of Work

However, the nature of work has changed dramatically during the last 75 years. Front-line personnel increasingly are becoming responsible for tasks traditionally performed by management—from quality control to worker coordination and work planning. Work is more socially and technically complex than it was in the first half of the twentieth century, when, for most people, work was sequential and involved the independent performance of discrete tasks. Today, and in the workplace of the future, work must be performed in teams that require each worker to perform tasks previously accomplished by several employees with different job classifications. In short, the workplace of the twenty-first century requires qualitatively different skills and behaviors. And the work for which schools prepare their students includes not only paid labor, but the unpaid labor of the family, as well. These and other profound changes in where, when, and how people work have rendered the earlier concept of exploratory education ineffective for enabling today's students to choose the type of work they want to prepare themselves to perform in the twenty-first century.

Unfortunately, as life's work has grown in complexity, what workers do has become less visible. It is not readily apparent, for example, what someone is doing while sitting at a computer terminal to a bystander unfamiliar with the task. By contrast, in the past it was easy for bystanders to observe the product of work and the concrete actions that produced it. Industrial work's outcomes were almost always concrete and observable. Automation has made many essential inputs an invisible part of the outcome; increasingly the product of today's work is information and services.

Consequently it has become increasingly difficult for young adolescents to grasp what work really is, to determine who they are in relationship to their work, to create a meaningful vision for themselves, and to establish a plan to achieve their vision. The old methods of exploring work, which were predominantly an examination of workers' technical skills, are no longer capable of helping young adolescents develop an appropriate, accurate, or reasonably complete concept of life's work.

> *We need people who have to be able to understand complex systems that they participate in, that they work in, because they are going to have to be able to adapt to them multiple times in the course of their worklife . . . .*
> *—Lauren B. Resnick*

For instance, work increasingly requires a combination of intellectual and social skills and the ability to make interdisciplinary connections. Workers must make snap decisions and respond to unpredictable changes. The consequence is this: *there currently exists less difference between the skills called "academic" and those called "vocational" than at any time in this century.* Therefore, to be effective, education must help students recognize *all* the skills they will need to succeed in their work, regardless of where these skills appear in the curriculum.

Virtually anything, and almost everything, students learn in school today may ultimately be applied in the workplace. Yet, lacking exploratory education—education in schoolwork/work connections—many students are incapable of appreciating what it will mean to be a productive adult and therefore in planning their education to help them reach that end.

In spite of dramatic changes in life's work, work exploration in the middle grades still provides little more than exposure to, or recruitment for, vocational and other elective options available in the high school. Even today, students are often placed in exploratory courses on the basis of the school's judgment of their ability rather on than on the basis of the students' interests. (Tye, 1985, p.113.) The underlying assumption that students need to be tracked or sorted according to vocational or managerial (academic) work goals still appears to be strongly in practice.

It is time for a new paradigm for exploration, one that fits with the current historical context. So, for purposes of this guide, exploration involves the student's search for answers to three interrelated questions:

- **self understanding** (who am I?)
- **social understanding** (what is life's work?)
- **goal setting** (what would I like to become in light of what I'm learning about myself and life's work?)

Exploration, then, is the process by which students learn to see (form a mental picture of) the major properties or inherent characteristics of life's work with the goal of helping them discover and/or clarify who they are and what they would like to become. The following passages discuss this definition as it applies to middle school curriculum.

The Process of Seeing or Forming a Mental Picture

Regardless of how clearly middle-school teachers or textbooks describe life's work, young adolescents will be unable to comprehend the concept without the opportunity to form their own meanings of it via exploration. Exploration helps learners make sense of new information by organizing or otherwise relating it to self-understanding, social understanding, and/or personal goal setting. The student can organize otherwise isolated or independent ideas around concepts that have personal significance: personal meaning is created as young adolescents relate the parts of what they see, hear, or otherwise experience to life's work or other key concepts, connecting new information or concepts to their existing concepts.

To assist students in learning to form a mental picture of concepts like "life's work," educators need to use strategies like cooperative group learning and concept learning. Both are essential strategies for achieving the exploratory aim or function of the middle school. (Note: cooperative group learning is discussed in Section 3 of this guide. Concept learning is discussed in Section 5.)

The development of thinking skills give[s] students the necessary tools to understand the content being taught as well as the larger world around them.
—Paul D. Eggen and Donald P. Kauchak

Major Properties and Inherent Characteristics: An Example

To understand what is meant by the major properties and inherent characteristics of life's work that students should "see" (that is, form a mental picture of), educators can bear in mind the metaphor of spelunking (cave exploration). First, it is logical to assume that a person would not be interested in cave exploration without first being aware of caves, their potential to be explored, and the possibility that they contain something of interest. In developmental terms, awareness is an aim or function of the elementary school while exploration is an aim of the middle school.

Before entering a cave for the first time, an explorer would have begun developing a concept of "cave" that includes a variety of major properties and inherent characteristics. The explorer may have learned, for example, that a cave's features include an entryway, a cavity large enough to permit a person to enter, darkness, humidity, certain types of mineral formations, and so forth. The explorer would be likely learn something about himself or herself as his or her interest in caves grew and developed. He or she would probably wonder, "What is it about me that makes cave exploration interesting to me? Who am I?" In a similar way, most young adolescents already will have developed a rudimentary concept of work as a result of how they have heard the term used, what their perceive their parents doing while engaging in work, and so forth.

Birds never sing in caves.
—Henry David Thoreau

When an explorer enters a cave for the first time, his or her concept of "cave" expands and changes dramatically. The focus of this initial exploratory experience would still revolve around the major features and inherent characteristics of caves. But the original concept would be refined as a result of the experience, and the newly refined concept would be more useful in organizing subsequent learning or information about caves. For example, details about cave structure, particular mineral composition, and so forth, would be organized under the expanded concept. And the explorer's own self-concept would change, as well. In the same way, as students initiate a formal exploration of life's work they will be introduced to major properties that previously never had occurred to them.

Even as the first exploratory experience was unfolding, the explorer might establish new goals and plans for future explorations. On the other hand, he or she might return from the exploration feeling that caves are dark, damp, unappealing places that he or she never wants to go near again. Nevertheless, the evolving concept of caves will remain useful, serving as an effective way of organizing knowledge about caves. As an exploration of life's work unfolds, this explorer will also use what he or she has learned about self and social understanding. These will be used to set new goals for future involvements.

Note that, in this example, the three interrelated goals for exploration are present. Self understanding (who am I?) is present when the explorer seeks to learn about why spelunking is interesting and when he or she has to deal with a whole new set of sensations while in a cave for the first time. Developing an understanding of, or concept for, "cave" contributes less to social understanding than to developing an understanding of, or concept for, "life's work." Nonetheless, both concepts do ultimately contribute to social understanding. Goal setting is exemplified in the explorer's decisionmaking relative to pursuing further cave expeditions or never to enter a cave again.

Exploration as a Learning Framework

All exploration, including cave exploration, has implications for an exploration of life's work. Anything that enhances self-understanding helps an individual develop meaningful goals. Anything that helps someone discover and further clarify his or her interests, aptitudes, and abilities, has the potential to be related to life's work. As any form of social understanding is developed and refined, the learner ought to learn to establish potentially logical connections between new learnings and life's work. This is what exploration is all about.

Organizing knowledge around key concepts, their major properties, and inherent characteristics involves the creation of integrating learning expe-

Table 2

Selected Characteristics of Two Concepts

The following list contains some of the major properties and/or inherent characteristics of the narrow concept of "cave" in the example in the text.

- opening
- cavity
- high humidity and cool temperature
- stalactites/stalagmites and other mineral formations
- animal/plant inhabitants
- dark
- quiet
- echoes

Similarly, it is possible to generate a list of some of the properties or characteristics of the key concept of "life's work." These properties or characteristics can then be explored in middle-level classroom activities.

- motivation
- perseverance
- interdependence
- goal-directedness
- cooperation/teamwork
- communication

riences. Exploration helps young adolescents integrate new learning into what they already know by helping them develop a mental sorting and storing system. This helps them unify knowledge irrespective of how educators and/or others fragment or segment it. As students explore the major properties or inherent characteristics of life's work and its subconcepts and learn to integrate these new ideas, skills, and knowledge into life's work, they develop self and social understanding.

Curriculum which is truly exploratory will also promote integration, that is, a blending of subjects and topics around a unifying theme.
—Edward N. Brazee

Exploratory learning helps young adolescents deal with the segmentation resulting from the way curriculum are currently structured. Students must be able to organize what they learn to retain it long enough to be useful. Exploring key concepts and focusing on concepts' major properties is part of creating a framework for learning. If this framework is broadly and meaningfully structured, it will have lifelong utility for students.

As indicated in Section 1, which discusses the rationale for the type of curriculum proposed by this guide, preparation for life's work is one of three essential broad goals for K-12 education. Even though the primary focus of this guide is exploring life's work, the other two broad goals of education—citizenship and lifelong learning—need to be explored as well. These three broad goals are interrelated and it is impossible to explore one without delving into the others. The strategies used to explore life's work apply equally well to citizenship and lifelong learning.

Self-Discovery and Goals Clarification

As indicated throughout this guide, it is important for teachers and curriculum planners to realize that the aim of exploratory learning is using content in the service of concept development. *The traditional content of curriculum does not form the subject of exploration.* Instead, content is used as a means of helping students explore the key concept of life's work. In this way, content is the means by which young adolescents discover and/or clarify who they are and what they would like to become.

Many middle-level programs currently tend to emphasize "becoming" at the expense of "discovering" or "clarifying," and, unfortunately, this may undermine the very goal—exploration (self and social understanding and goal setting—the middle school is supposed to achieve. Teaching students to be preoccupied with academic achievement (the need to get into a "good college") or with extracurricular performance can foster narrow views. For example, premature emphasis on the need to become semi-proficient in a foreign language could cause a student to choose a language inconsistent with her tentative life goals; she might choose a language in which it is easy to gain proficiency rather than one that might better serve her later work goals. Similarly, a student who must develop proficiency in clarinet to get into the school band may minimize her opportunity to pursue a talent in vocal music that may have major implications for her life's work.

The Overzealous "Preparation Mentality"

According to Conrad Toepfer (in Spencer, 1987) one reason middle-level curriculum is not as exploratory as it might be is that many education critics have attempted to make middle-level education part of the college-preparatory cycle. This is attributable to a "more is better" or "we must start earlier" mentality. Says Toepfer, it is important to remember why exploration has been a major function of middle-level education. "Emerging adolescents between 10 and 14 years of age need to clarify who they are and what they would like to become. To decrease this function in the name of making the middle-level school an integral part of the college preparatory system would be counterproductive to their educational needs." (Spencer, 1987, p. 16.)

Neither the high school model of college preparation (as academic education) nor the high school model of job preparation (as vocational education) can be effectively imposed on the middle school. Furthermore, the middle-school goal of exploration is not subordinate to the high school goal of preparation. Exploration is a crucial goal unto itself that fits perfectly with the developmental needs of young adolescents. In this view, exploration is an aim or function to be achieved through concept learning.

The purpose of a good middle level school is not just to provide some subjects that might be labelled "exploratory" but to provide experiences within every subject that are exploratory in nature.
—George Melton

All Courses Are Potentially Exploratory

Under this new view, no course (for example, art or business education) or type of course (for example, nonacademic or vocational) is inherently exploratory. Yet *all* courses, including academic ones, have the potential to help students explore life's work and *ought* to be exploratory. Exploration is the very essence of the middle school! Although any course (in the traditional sense) can be exploratory in nature, it qualifies as exploratory if, and only if, it is designed or redesigned to help young adolescents

- see the major properties or inherent characteristics of a key concept such as life's work (social understanding).
- discover who they are (self understanding).
- determine what they would like to become (goal setting).

Although middle schools should not be recruiting grounds for high school elective courses, effective exploratory experiences at the middle school level, and the self-understanding and tentative goal setting these promote, will almost certainly increase interest and subsequent enrollment in high school elective courses. Without effective exploratory experiences to help them make sound choices about their high school coursework, students run the risk of being easily influenced by guidance counselors, peers, parents, or others when making these important decisions. A viable exploratory experience will enable young adolescents to become active participants in their own high school educational planning. They will possess sufficient self and social understanding and goal setting skills to determine which courses and other educational experiences are in their best interests.

Teaching in an Exploratory Mode

How we teach depends to a large extent on who we are. The goals that we select, the strategies we employ and the way that we relate to students all depend on what we bring to the classroom as human beings.
—Paul D. Eggen and Donald P. Kauchak

Exploration could be compared to the process of looking at the picture on a puzzle box lid before attempting to assemble the individual puzzle pieces. Having a vision of the assembled product (goal) makes it easier to assemble the individual pieces. This also has been characterized as "the great incentive to work which comes from the clear vision of the end of education in the beginning." Exploration helps students see the major properties or inherent characteristics of life's work *before* attempting to integrate or assimilate its various pieces. The typical middle-level program tends to focus on facts and details—the pieces—without attempting to put them in some larger context. This, in effect, is like trying to assemble the puzzle without having seen the picture on the lid.

As with looking at the picture on the lid, exploration creates for a middle school student a broad view of life's work. It also helps provide the framework or sorting-and-storing system students will need to integrate and retain new information about life's work. Young adolescents learn best by connecting new information and concepts (the pieces) to something they already know.

Human thought that does not have multiple links with what a student already knows about his/her world (the picture on the cover) is not likely to be remembered or useful. Without having seen the whole, some students simply will not be able to attribute essential properties to their whole. The true properties of life's work cannot be appropriately developed through a disconnected study of its individual parts. Students have to be able to "see the forest as well as the trees."

Assessing Exploration

The term "exploration" is not an absolute one. The more fully a middle-school course, discipline, or set of experiences reflects exploratory attributes, the more likely they will respond to young adolescents' developmental needs. While exploration is not the only aim of the middle school, middle-school experiences should be as exploratory as possible. The Exploratory Learning Scales at the end of this section provide a means for evaluating a course or curriculum for more or less exploratory attributes.

In brief, the more fully a middle-level course or curriculum reflects exploratory attributes

- the more likely it will respond to the developmental needs of young adolescents.
- the better it will help students understand their own interests, aptitudes, and abilities.
- the better it will prepare students to achieve self and social understanding and other appropriate ends of high school education.
- the better it will help students establish tentative goals and to make decisions that ensure a smooth transition to high school and life's work.
- the more it will teach students about what it means to be a productive citizen.

Insofar as possible, middle-school programs ought to reflect these exploratory attributes. The desired "ends" of high school cannot be permitted to overshadow the developmentally appropriate "means" that ought to heavily influence middle-school programming. Doing more of what is done in high school at the middle-school level is not in the best interest of middle-level learners.

Exploration has a crucial role in any learner's education. Without a viable exploratory experience many students will pursue in-depth preparation in what is for them the wrong ones. They will make choices—or will fail to make choices—lacking the self and social understanding and goal-setting skills necessary for such an important responsibility.

Exploratory Learning and the "Knowledge Explosion"

The educational and developmental needs of young adolescents, the exponential explosion of knowledge, and the demands the knowledge explosion places on tomorrow's citizens all point to the importance of a new paradigm for exploration. It is important for teachers to understand that exploration does not require them to teach more than they have in the past. If anything, it asks them to teach less (fewer facts) and, instead, to help young adolescents form or develop key concepts implied by the broad goals of education. In this way, what is taught can serve as a context for what others teach later. Exploratory curriculum is therefore student centered rather than content centered, having more to do with the perceived end or purpose of what classwork than with subject matter or content.

Exploration is an aim or function of middle school. It is an intentional curricular design, emphasis, end, or goal and it requires the use of concept learning and cooperative group learning as a means to achieving this goal. The mechanisms for exploratory learning discussed in this guide are concept learning and cooperative group learning, which are discussed in sections 3 and 5 of this guide.

[T]he public must recognize that teachers need not be experts in a field or have all the answers. In a society whose knowledge base doubles every 10 years, this expectation is no longer realistic.
—Thomas R. Owens

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Exploratory Learning Scales: An Assessment Tool

Educators can assess the extent to which a contemporary view of exploration influences their middle-level program. This can be done by examining their program, estimating the extent to which each of the following curriculum variations are represented, and marking the continuum as appropriate. The characteristics or attributes representing the "more exploratory" and "less exploratory" ends of each continuum were derived from adjectives used by middle-level educators when describing exploration. Insofar as possible, middle-school programs ought to reflect attributes that lie on the left, more exploratory, end of each scale. Curriculum planners can use these scales to determine areas that need attention and improvement if exploration is to be a significant program aim.

More exploratory

Less or not exploratory

Curriculum Focus #1: Breadth of Focus

Exploratory curriculum assist students in seeing major properties or inherent characteristics of life's work (and other key concepts) rather than minor and relatively insignificant facts and information. Thus a key source and focus of middle-level curriculum ought to be main, essential, or broad concepts or ideas rather than secondary, subtle, or narrow concepts or ideas.

Broad focus
Narrow focus

Curriculum Focus #2: Goals

Exploratory curriculum is designed to help students achieve self-understanding and to set developmentally appropriate goals in order to discover who they are and what they would like to become. Therefore, student questions and concerns ought to be a major source of exploratory curriculum. The student is the "subject" of exploration. Although content or subject matter is still important, it does not direct or control exploration.

Student centered
Content or subject centered

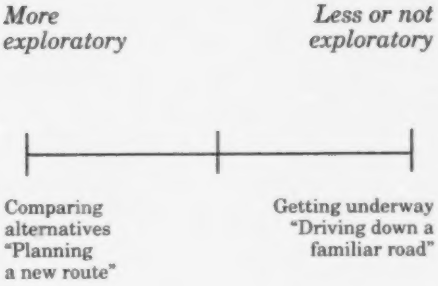
Learning Mode Encouraged

Since self-understanding is a purpose of exploratory curriculum, it is important that young adolescents be actively engaged in the learning process. Active learning requires the student to reflect on, organize, or process information into knowledge so that it attains personal significance. Young adolescents must be physically and mentally involved in learning to remain alert, and their learning must inspire their powers of imagination. Passive learning occurs when the student's role is merely as a receiver of information.

Active
Passive

Perceived Goal of Learning #1

Exploration can be compared to getting ready for a long vacation by car: even though the passengers may be eager to get underway, they should compare alternative routes and study the map before leaving. Without this planning, the vacation is less likely to be interesting and enjoyable. It is more likely that they will need to backtrack, that better routes will be overlooked, or that the road leads somewhere the passengers may not have chosen to go. Likewise with exploratory learning, the more time a young adolescent devotes to exploration and to seeing the alternatives, the better his or her choices are likely to be.


More exploratory
Less or not exploratory
Comparing alternatives "Planning a new route"
Getting underway "Driving down a familiar road"

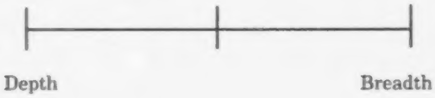
Perceived Goal of Learning #2

As the world of paid work becomes increasingly specialized, students are often urged to specialize prematurely. There is the danger that students can limit their scope of study before becoming adequately aware of their interests, aptitudes, and abilities. A more helpful response to the social emphasis on specialization is to teach young adolescents to expand their self-awareness and social understanding so they can better set appropriate goals and make better choices among a range of ever-expanding options.

Investigation
Specialization

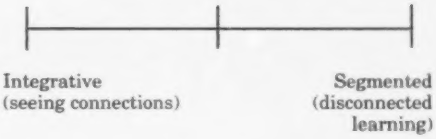
Coverage of Curriculum

Since exploratory curriculum is designed to help young adolescents see the major properties or inherent characteristics of self and society, valuable classroom time should be devoted to thoughtful and deep analysis of key concepts or issues. It is inappropriate for curriculum to inundate young adolescents with minor details or to limit them to skimming the surface of issues to ensure coverage of a too-broad syllabus.


Depth
Breadth

Connections

Segmented, decontextualized information that does not contribute to or cannot be organized as part of some key concept is likely to be forgotten. If they are to retain what they learn, young adolescents must be able to link their middle school studies to a key concept that promotes self and social understanding. Life's work is one such key concept.


Integrative (seeing connections)
Segmented (disconnected learning)

Concept Learning

Making Sense of a Complex World
How Concept Learning Is Done
Strategies for Teaching Concept Analysis
Conclusion
References

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Making Sense of a Complex World

Concept learning is a teaching/learning strategy grounded in the belief that people innately strive to make sense of the world around them. It requires students to be actively involved in the learning process. It asks them to observe, compare, find similarities and differences, and form concepts and generalizations based on the similarities they find. In an effort to achieve the order they instinctively they need, concept learning helps students become more proficient at investigating and structuring all of their experiences. (Eggen and Kauchak, 1988, p. 3.)

Concept learning is a component of *Exploring Life's Work* because it can help young adolescents assimilate and structure large amounts of specific information and because it recognizes how learning really occurs among middle-school students. Students who have used concept learning to develop a meaningful concept of life's work will be able to assemble otherwise disjointed information into useful knowledge that will serve them throughout school and life.

The aim of students' education is knowledge, which they create from the information they question, analyze, elaborate upon, and ultimately use. Knowledge is not gained from memorizing and feeding back bits of information communicated by teachers. Thus, students cannot construct a real understanding of something as complex and abstract as "life's work" without actively creating knowledge and exploring the concept. Even repeated exposures to facts and information cannot lead to a real understanding of complex concepts or result in wisdom.

Concepts Organize Sensory Information

Concepts without factual content are empty; sense data without concepts are blind. . . . The understanding cannot see. The senses cannot think. By their union only can knowledge be produced.
—Immanuel Kant

According to Robert Clasen, concepts are tools the human brain uses to collect and organize ideas that have something in common. Lacking this ability, the mind would become overwhelmed with information. So, the brain automatically tries to organize whatever the senses see, hear, smell, touch, and/or taste by seeking the essential qualities of each experience and treating similar ones as similar concepts.

A good metaphor for this process can be gleaned from advertisements for closet organizing systems. The "before" photo depicts an unorganized closet overflowing with items that have been randomly thrown into it. There is no order to this closet: items are heaped together, much space is wasted, only the items closest to the door are visible, it isn't easy to see where another item could be stored, and there is danger of an avalanche each time the door is opened. Contrast this to the "after" photo, in which the organizing system has been placed in the closet: every item has its place, is clearly visible, is readily retrievable, is placed with like items, has functional relationship to items around it, and there is space to spare for new items to be added later.

The human mind uses concepts as its organizing framework. Concepts are the human mind's organizing apparatus. Up, down, hot, cold, dark, and light are concepts that humans form very early in life to categorize some of what they perceive. But as the amount and complexity of perceived information grows, more encompassing concepts or categories are needed to manage the influx of information. The concepts become broader and more abstract. "Elevation" may ultimately subsume "up" and "down." "Hot" and "cold" are incorporated into the broader concept of "temperature." In this way, bit by bit, the entire conceptual system becomes more sophisticated.

Clasen suggests that another way in which concepts are useful to the mind is by keeping thinking clear and uncluttered. Concepts serve as sorters, organizers, and memory aids for facts and information and permit the conveyance of much information in a brief form. Think of, for example, how much information is encoded in phrases like "He is a good worker," or "Quiet! Your mom is working on her presentation for tomorrow." In making both statements to young adolescents, adult speakers harbor the assumption that they will have a reasonable notion, mental picture, or understanding that the "work" in question involves subconcepts such as "productive activity requiring motivation, sustained effort, intercommunication, social organization, and some sort of management."

Yet it is important for educators to realize that even the most basic concepts, like "work," are not transparent. While the typical ten- year-old's concept of "work" may be useful at this stage of his or her life, it is inadequate in terms of what the concept will need to encompass by the time he or she enters high school and must make important decisions about postsecondary education, career paths, family plans, and civic participation. In fact, many adults do not possess a concept of life's work adequate for achieving success.

I do believe that young children can learn to think in systems. They live with interdependence every day—in families, home rooms, and in the local public park.
—Harlan Cleveland

Creating a Conceptual System

The creation of a more sophisticated and abstract conceptual system or framework is a always a complex and difficult task. Most people could benefit from help in creating one. However, this assistance or guidance is not now typically available in public schools. To continue the earlier metaphor, even though most students' conceptual closets are becoming increasingly disorganized and are in many cases already overflowing, young adolescents are being asked to put ever more "stuff"—facts and information— in them! Constructing the framework for organizing and making sense out of the stuff is not considered the objective of classroom education. Middle-level education is currently facing the challenge of how to help learners get better organized and to make sense out of stuff.

Understanding of any concept is an evolutionary process, and middle-level learners' concept learning is no exception. Initially, a young child might attach the label "work" to a limited number of specific examples that appear to have a common element such as "where moms and/or dads routinely go on weekdays." Gradually children come into contact with more things that other people seem to include in the same category. For example, a teacher may suggest that a child should "get back to work" without elaborating upon the meaning. An older sibling might complain that shovelling snow "is hard work." A parent might observe that a household appliance no longer "works." As the learner comes into contact with diverse and sometimes even conflicting examples, his or her concept changes in quality, becoming more or less refined and taking on new and different features.

Educators can systematically help students form concepts and further develop concepts so they become more useful. A young adolescent may, for instance, have observed that bricklayers do some things that are fundamentally different from what retail clerks do, and retail clerks do some things that are fundamentally different from what medical doctors do. Yet, he may have already concluded that what mason, clerk, and physician do can all be organized somehow under the broad concept of "work." An outside observer discussing the concept of work with this young adolescent might assume that, at some point, he or she has observed representatives of each of these occupations engaged in work-related activities: communication, cooperation, interpretation, and analysis.

More likely, however, it is probable that this young adolescent will simply have concluded that these three occupations are somehow related to what his or her parent(s) routinely do while "at work" away from home on weekdays. As a consequence, he or she may not recognize that what his or her mother does at home at 8:30 is also work, as is her civic involvement and her maintenance of extended family ties. Thus, his or her existing concept is incomplete and needs further expansion, development, and refinement.

[A]ll students—except those few with severe mental disabilities—can learn to think and reason at high levels.
—Carnegie Corporation of New York

In fact, employers suggest that many new employees fail to succeed at their first paid employment because they don't understand what's expected of them. These employees possess an incomplete concept of the essential characteristics of work. Similarly, family disputes can easily arise when one or more family members fail to recognize the central role interdependence plays in the work of family. An inadequately developed concept of life's work will have distinct, immediate, practical, and important implications for the person who holds it! An incomplete or inadequate concept may result in inappropriate generalizations, poor decisions, and insufficient framework for assimilating more sophisticated notions.

Development and Concept Learning

It is important for educators to realize that children will create their own concepts regardless of what the school does. It's also important to highlight that the school can serve as a setting in which concept evolution can occur in a deliberate, practiced manner. This is precisely what concept learning seeks to accomplish.

Research on the intellectual development of young adolescents supports the use of concept learning in middle-level schools. As suggested above, however, their concepts may be inappropriate or inadequate. They may be heavily biased by value preferences or prejudice perceived as fact. According to Clasen and others, between the ages of ten and 12, a child's mind develops a much greater capacity for classification, so great that it is almost as though the mind achieves a new dimension. Once this capacity emerges, the child's power to develop concepts is limited only by the kind and quality of experiences he or she has. What this means for middle-level curriculum and instruction is that young adolescents are, or soon will be, ready to form the broad or abstract concepts like "work," "citizenship," and "justice," that can have lifelong utility, and they have the capacity to organize their thinking in new and incredibly powerful ways. However, this can happen only if their educators provide them with experiences that permit this concept formation.

Exploration, the focus of section 4 of this guide, is the curricular aim intended to ensure that young adolescents have a systematic and multidimensional opportunity to "see" (form a mental picture of) the major properties and inherent characteristics of life's work. Exploration ensures that the experiences students have for the concept "life's work"

- are comprehensive;
- are high in quality;
- result in self and social understanding; and
- are capable of promoting or supporting personal goal setting.

Categories of Concepts

In seeking to build concept learning into curriculum and instruction, educators need to be aware that there exist two broad categories of concepts: specific (or concrete) and global (or abstract). In the past, vocational educators have effectively taught specific concepts such as "joist," "typing," and so forth. These concepts are relatively easy to teach since there are numerous highly visible examples of them that can be seen, and touched. Indeed, for many years the hallmark of vocational education has been that it is "hands-on" education.

Specific or concrete concepts have limitations. They often involve little more than factual information or descriptions of a condition, event, or substance. They rarely connect students with the "structure and ways of thinking" that characterize life's work. (Goodlad, 1984). Further, many specific or concrete concepts have widely accepted definitions; they leave little opportunity for discussion, inquiry, or argument and they do not address the broader, more abstract, social and economic issues which are a vital part of life's work. In this way, specific concepts can promote a sense of isolation, since there is no dialogue between the learner and what is being learned, making it difficult for learners to expand upon or easily discover important connections between ideas. Most written curriculum, textbooks, and workbooks currently in use focus on specific (or concrete) concepts if they focus on concepts at all; most often, they focus on topics and facts.

What is essential is invisible to the eye.
—Antoine Saint-Exupery

By contrast, global or abstract concepts provide the learner with the opportunity to examine relationships between ideas and to construct real knowledge, as will be seen shortly. They are, however, more difficult and time consuming to teach than specific or concrete ones. Their qualities and characteristics cannot typically be viewed, touched, or otherwise directly and easily experienced. Instead, the nature and scope of their qualities must be *inferred* from something that can be sensed directly. But global or abstract concepts are vitally important because they serve as "hooks" upon which the learner can "hang" ideas that are subsumed under the broader concept; they permit students to organize information into knowledge. The broader a concept, the more it stimulates thought and discussion. The concept "life's work" is extremely broad in scope because many others can be subsumed under it. Unfortunately, global (or abstract) concepts are seldom the focus of written curriculum, textbooks, or workbooks.

Table 3 helps clarify the difference between specific or concrete concepts and global or abstract ones. Figure 2 demonstrates how a global concept subsumes other concepts and provides examples of some possible subconcepts of life's work.

Table 3

Examples of Specific and Global Concepts

Specific or Concrete	Global or Abstract
computer	process
bookshelf	organization
typing	communication
lease	agreement
joist	structure
robot	system
diet	wellness

Reason respects the differences, and imagination the similitudes of things.
—Percy Bysshe Shelley

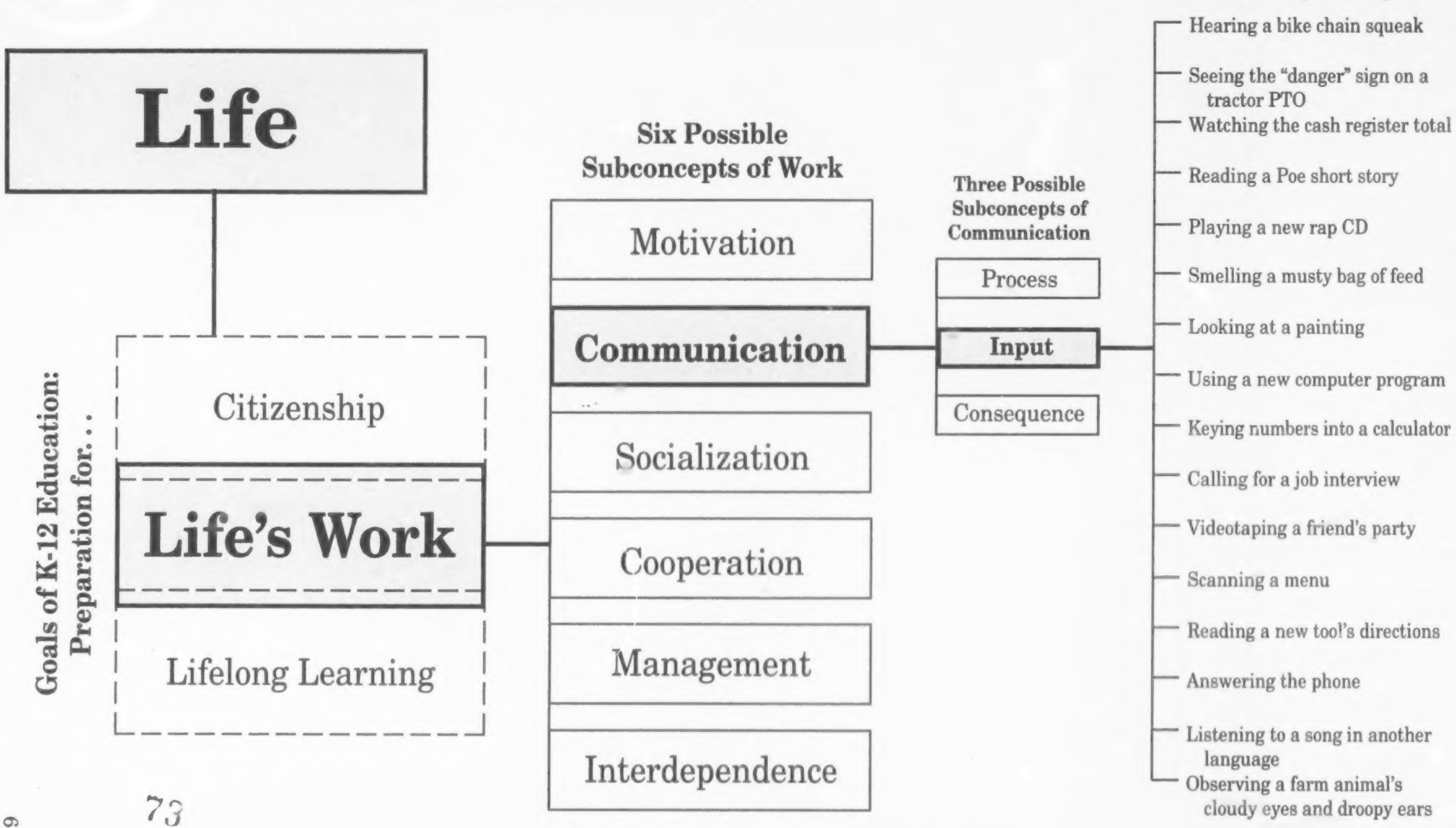
A concept is formed in relation to other concepts. Broad, more abstract concepts, such as life's work, include more subconcepts than do narrower ones. For example, life's work subsumes the concepts of motivation and communication. Just as it impedes student understanding for teachers to teach random, isolated facts, it is important for middle-level students to learn how to make connections between concepts, between concepts and their subconcepts, and between subconcepts. Educators should plan curriculum and instruction with the intention of teaching concepts in an integrated manner. Focusing on broad concepts will facilitate this. Students will not only begin to see the connections between vocational and general education, but also the connections between general subjects like math and science. They will also see how vocational subjects are interrelated and why there is more than one vocational field of study. Studying isolated concepts prevents students from getting "the big picture" that ensures complex, wide-ranging understanding.

One way of organizing concepts is to arrange them hierarchically into superordinate, subordinate, and coordinate concepts. These terms refer to the breadth and depth of concepts as well as their relationship to other concepts. For example, the concept of "coin" is subordinate to the concept of "money." In this curriculum, the concept of "work" is superordinate to the concept of "cooperation." The concepts of motivation, communication, and cooperation are coordinate to one another when they are subordinate to (or subconcepts of) "life's work." This is important for curriculum and instruction: students need to understand the nature of relationships between concepts/subconcepts to enhance their grasp of the whole. Mapping out a concept, as shown in Figure 2, can provide an in-class activity that lets students understand how concepts interrelate. The ways that concepts relate to each other could well comprise a separate book, and the motivated teacher will want to explore conceptual hierarchies and other ways of relating concepts.

Figure 2

An Example of a Conceptual Hierarchy

Conventional, content-oriented curriculum can encourage students to think of the diverse examples of inputs as unrelated phenomena. The Exploring Life's Work approach lets young adolescents see how apparently dissimilar actions and events can fit into an orderly, conceptual framework.


Life
Goals of K-12 Education:
Preparation for. . .
Citizenship
Life's Work
Lifelong Learning
Six Possible Subconcepts of Work
Motivation
Communication
Socialization
Cooperation
Management
Interdependence
Three Possible Subconcepts of Communication
Process
Input
Consequence
Diverse Examples of Inputs
Hearing a bike chain squeak
Seeing the "danger" sign on a tractor PTO
Watching the cash register total
Reading a Poe short story
Playing a new rap CD
Smelling a musty bag of feed
Looking at a painting
Using a new computer program
Keying numbers into a calculator
Calling for a job interview
Videotaping a friend's party
Scanning a menu
Reading a new tool's directions
Answering the phone
Listening to a song in another language
Observing a farm animal's cloudy eyes and droopy ears

[W]hile exciting experiments in curricular reform have popped up here and there, many educational policy makers and managers will remain most comfortable with approaches which treat schools as knowledge factories and teachers as technicians.
—David Levine

It is not enough for teachers to discuss coordinate concepts (such as motivation, interdependence, and communication) separately. Students need to see those ideas in relation to other concepts so that they can sort, organize, evaluate, analyze, and otherwise process new information. Some learners can perform this concept analysis automatically. Others need help to see how the newly organized or extended concept can be related to other familiar ones.

Clasen also points out that since broad or global concepts are typically abstractions which are not available immediately to our understanding through sensory processes, they are likely to be much more individualistic than are concrete concepts. Global or abstract concepts are the product of all of the learner's experience and will be much more highly personalized than concrete concepts. In the classroom, this means that a student's mental picture of life's work will be the product of his or her own connections between other concepts and of the experiences that led him or her to make those connections. When the learner recognizes connections between concepts, he or she is engaging in the integrating or integrative process discussed on pages 6 and 7 of this guide. The teacher's role, then, is not to make these connections *for* the learner, but rather to facilitate the integrative process. An example of how this works appears in Classroom Scenario B: Concept Learning on page 71. This is why cooperative group learning and exploration are major features of *Exploring Life's Work*.

How Concept Learning Is Done

A succinct summary of the mechanics of concept learning is provided by Clasen in this quote:

> In learning about concepts two kinds of experiences are critical: experiences with things that *are* an element of the concept and experiences with things which [sic] are *not* an element of the concept. The difference between "are" and "are not" is quite clear when the concept of food is considered. Quite a few more things are *not* food [than are]. Children, at first, push almost anything into their mouths. Gradually, after a number of bitter, sour, or painful experiences, they come upon a reasonable or operational understanding of what food is. In the direct teaching of concepts it is important to remember this basic exploratory pattern of inclusion and exclusion. (1986, p. 11.)

What Clasen refers to as "things that *are* an element of the concept" are its characteristics. "Things which are *not* an element of the concept" are its noncharacteristics. When examples, nonexamples, and a definition are added to these two features of a concept, they comprise the five elements a variety of authors maintain form the basis for conceptualization. When a learner puts together each of these five elements, the "whole" begins to emerge.

Clasen provides an illustration of teaching the specific/concrete concept of *coin* using characteristics, noncharacteristics, examples, and nonexamples. Young students can be shown that a penny, nickel, dime, and quarter are coins, while a dollar bill and flat metal washer are not coins. A dime is an example of a coin because it includes all of the essential characteristics of the concept "coin." A flat washer is a nonexample of the concept because it includes some, but not all, of the characteristics of this concept. The analysis of a concrete concept like "coin" is relatively easy: most of its characteristics can be seen and touched. Ultimately, a child's concrete concept of "coin" needs to be subsumed by broader concepts like "money," "currency," or "legal tender." As the learner moves from narrower to broader concepts, the teaching and learning processes become more complex. This is due in part to the fact that, the broader a concept is, the more abstract are its examples and nonexamples. Global or abstract concepts like worth, value, and exchange cannot be directly sensed. Experience of them must occur by inference, through more "intellectual" channels. Narratives, scenarios, stories, events, experiences, (including actual work experiences) articles, discussions, and other media must now be used to help the learner "see" the major properties and inherent characteristics of the concept.

An illustration will help clarify this. As noted earlier, young children will develop an elementary concept of "work" by observing people doing what others refer to as work. Yet, from an adult perspective, children cannot adequately explain why a specific example constitutes work any more than they can adequately explain why a coin is legal tender. At some point, they will have to make inferences about why one activity is work and another is not, just as they learn to make inferences about why one type of green-printed paper has value while another—such as play money—has none. To develop the more powerful, global or abstract, concepts like "life's work," learners must go beyond direct observation and engage more fully in abstract mental processes, understanding *why* something is an example or an nonexample of the concept under consideration.

A fragmented and assembly-line education actually inhibits the grasp of the link between subjects and life that is essential for complex learning.
—Renate Nummela Caine and Geoffrey Caine

Teachers should note that there is a difference between nonexamples and things that are totally unrelated to the concept under consideration. A baseball is not a nonexample of a coin; comparing a coin and a baseball does not help the learner clarify his thinking about coins. A flat washer *is* a nonexample of a coin because its difference makes the concept clearer.

Of course, teachers will need to select examples and nonexamples carefully to ensure adequate initial concept formation. If a middle-level youngster receives six examples of life's work, all of which include the characteristics of manual effort, wages, and activity outside the home, it would be reasonable for him to conclude that manual effort, wages, and activity outside the home are essential characteristics of life's work. Until adulthood, this child may incorrectly assume that work must involve these characteristics to be called work, and he may conversely assume that anything that lacks these characteristics isn't work. This is why concept formation at the middle level is so important: this child needs to be aware of examples of work that do not include these characteristics.

Thus, concept formation requires both numerous and appropriate examples through narratives, experiences, events, stories, and the like. And it is not enough for students merely to "see" the additional examples; they must also consider (think about) why these examples were chosen. Unless they understand why an example is an example, (that is, what essential characteristics it possesses) concept development or refinement will not occur. This is why opportunities for dialogue become so important and why cooperative group learning is a strategy promoted by *Exploring Life's Work*. The example provided in Classroom Scenario B (begining on page 71) demonstrates how a lesson would move rapidly from the examples the teacher has considered in advance to active student involvement in the learning process.

> *We are students of words; we are shut up in schools, and colleges, and recitation rooms, for ten or fifteen years, and come out at last with a bag of wind, a memory of words, and do not know a thing.*
> *—Ralph Waldo Emerson*

Concept Teaching

The ultimate goal of concept teaching, then, is to help learners establish mental images of the set of characteristics that comprises an example of the concept and that distinguishes examples from nonexamples. (Ehrenberg, 1981) It is important for teachers to understand that it is the *process* of generating these elements—characteristics, noncharacteristics, examples, nonexamples, and a definition—that constitutes real learning and that gives concept learning its power. Having students simply memorize any or all of the elements will not help them learn about or broaden concepts. In the initial stages of concept learning it may appear that the teacher is overly involved in determining what is inappropriate and appropriate for students to focus on, but as the process unfolds and students become more adept at the process they take more responsibility for guiding the process from the outset.

Developing a concept analysis may, at first, appear to be an easy exercise. In reality, it is not. Inherent in the process is a give and take between the elements; for instance, if one characteristic is deleted, added, or changed in the course of the analysis, all other elements may be affected, and examples, nonexamples, and definition need to be changed.

Concept analysis is a holistic process that introduces students to examine inter-relationships between ideas constantly, a mental operation that is at the heart of true learning and thinking. The process is carried out slowly and thoughtfully, guided by the teacher, with ample time for learners to listen, read, view, discuss, and disagree about a suitable definition and appropriate characteristics and examples for the concept. The classroom time required to form or develop a reasonably complete concept will vary according to the concept's complexity. Some global/abstract concepts may require as much as an entire semester before learners develop a sense of ownership and personalized meaning. Of course, the classroom teacher can teach a number of subconcepts while teaching a major one.

Teachers can observe these key points while developing a concept analysis with middle-school learners:

Acquaint students with the elements of concept analysis. Most middle- school learners will not be familiar with or practiced in the mechanics of concept analysis. To be prepared to analyze concepts, students will need to be taught what concepts are; how concepts differ from facts and information; that concepts possess characteristics, noncharacteristics, etc.

Select a variety of supporting media. Text and reference books and other commercial media tend to provide sources of factual information rather than analyses of global/abstract concepts. Therefore, the teacher will want to incorporate a variety of media and points of view into classroom activities. This will counteract students' tendency to feel constrained by what others have concluded are the facts and students will be more willing and able to explore and expand their own ideas.

Consider student diversity. Depending on their background experiences, special interests, and available resources, each learner or group of learners will probably generate a different definition, set of characteristics, and examples for the same concept. Furthermore, all of the students' analyses may differ from the teacher's. Discovering that different people hold different meanings is an important learning experience—for teacher and students alike!

Be prepared to be flexible. At least at the beginning of a concept learning exercise, the teacher may have to accept characteristics and a definition, proposed by students, that lack sophistication and precision. Teachers can sensitize learners to deeper levels of precision and to the existence of different meanings by asking questions such as

- How did you form that concept?
- How is your concept like and/or fundamentally different from those of your classmates?
- How do you think your meaning of the concept might change over time? What do you think it will mean when you're 16? When you're 25? When you're 50?
- Can you think of any consequences that might come out of your having that particular meaning for that concept?

Be prepared to re-examine accepted or "given" meanings. To assist students as they form or develop global or abstract concepts, teachers will need to re-examine meanings they and other adults commonly hold. Concept analysis is a valuable planning tool for teachers designing concept-based learning activities. It is discussed below in "Strategies for Teaching Concept Analysis."

[I]t's a healthy idea, now and then, to hang a question mark on things you have long taken for granted.
—Bertrand Russell

Teaching and learning concepts is not easy. Concept learning is a process that occurs over time and develops full, rich meaning by building upon past experiences and knowledge. Centering curriculum and instruction on global/abstract (broad) rather than specific/concrete (narrow) concepts in the classroom enhances learners' ability to interrelate ideas and to contextualize facts.

Strategies for Teaching Concept Analysis

Concept analysis is the systematic examination and exploration of a concept. The five parts of a concept analysis—characteristics, noncharacteristics, examples, non-examples, and a definition—were described briefly on pages 64-65. Appendix A offers a more detailed description of how concept analysis works and an actual analysis of the concept of "life's work" done by a group of educators involved in developing this guide. Classroom Scenarios B and C, at the end of this chapter, show how concept analysis can be used to pilot curriculum and instruction and to help guide teachers' thinking as they do their own concept analysis to prepare for a course, unit, or lesson. And section 8 of this guide includes six sample activities that offer ideas to teachers who wish to implement concept learning in their classrooms.

Teachers can use a variety of strategies to help students systematically form, develop, or refine concepts.

> *All too often teachers organize reality and turn over that organization, full-blown, to the students to remember until test time.*
> *—Thomas C. O'Brien*

Help students draw upon their past experiences. Drawing upon their past experience helps make students explicitly aware of the knowledge and experience that they already possess. This can raise and support their self-esteem: they know they are not in totally new territory. At the same time, it piques their curiosity, encouraging new learning. Learning activities that can draw on students' past experiences can include writing activities, a more "grown-up" version of show and tell, or other self-concept and self-awareness activities.

For instance, everyone in a typical middle-level classroom has engaged in some form of communication. A teacher could ask students to reflect on situations in the past 24 hours that had required communication and to imagine what might have happened had communication not been possible or not occurred. Such an activity would generate numerous opportunities to help students further explore and clarify the concept of communication and to relate it to the larger concept of life's work.

Teachers can set up interviewing opportunities. Interviews of others, particularly adults, can help students expand their point of view and learn to view things from different, even multiple, perspectives. Learning to develop interview questions and to conduct an effective interview develops students' thinking and builds communication skills and confidence.

Small groups of students could be asked to plan interviews with individuals who are retired, engaged in a specific profession, involved in civic work, or doing work in the home. Students' interview questions can be designed to elicit what the respondents perceive as the essential elements of satisfying work. Interview results would form the basis for discussing what makes work satisfying, what kinds of activities include work, and so forth.

Teachers can tailor hands-on/minds-on experiences. A hands-on/minds-on experience will require students to make or create a product not unlike those traditionally made in a vocational laboratory, art studio, or science laboratory. However, the aim is not to focus on the product alone (its quality, its ability to compete in the marketplace with other products, how quickly it was produced, etc.) but on the process used to create it. The focus is on the human work of creating and processing materials and information, rather than solely on the outcome of the work.

For example, one general skill that everyone uses is listening. Listening can provide information that helps people use their minds (and other resources) productively. Students could develop a concept of the importance of listening by being required to use audiotapes to complete a laboratory activity. Discussions following the activity would help students reflect on the connection between what they do with their hands and what goes on in their heads.

Teachers can use synectics. Synectics comes from the Greek word "synektikos," which refers to the joining of unrelated elements. It is a process of thinking with analogies designed to stimulate creativity. Synectics helps students look at a word or idea they think they know about or understand and helps them see it in a different way. Students learn through synectics to make simple comparisons, to take the role of or pretending to be the thing they are analyzing, and to experience symbolic analogies.

Using synectics to explore the concept of life's work could include an activity such as this one; students could be asked to list 15 ways that a factory is like a circus. Student-generated examples might include that everyone in both settings has multiple social roles; that both factories and circuses might have to generate a product that ultimately pleases someone; that many activities occur simultaneously in both settings; and that both settings offer challenges to participants.

Concept Learning and Curriculum Content

Concept learning is not intended to replace all of the curriculum content educators now value. Instead, concept learning provides a way for students to organize and structure large amounts of information so they can retain, use, and build upon it. Creating this organizing structure for concepts, however, will require that some time be taken from that previously devoted to the communication and memorization of information. Concept learning helps students—and teachers—refocus attention on higher order outcomes—concepts and thinking skills—that content ought to serve.

The information explosion has made it virtually impossible to learn everything that it might be desirable to learn. Educators must make tough decisions to determine what youths most need to know. Content that is worthy of being learned must be worthy of being remembered and used. According to Clasen, the vast majority of what students now learn in school is absorbed by rote (1986, p. 90). Some content—the periodic table of the elements, certain songs or poems, the alphabet, certain arithmetical facts—is overlearned and therefore retained. The rest is quickly forgotten. In both instances, learning that is not organized (not processed into knowledge) cannot be retained and used as a basis for decision making and continued, lifelong learning.

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The authors of *Exploring Life's Work* believe that key concepts like life's work, can, and ought to, organize *K-12 education*. One or more of the broader subconcepts subsumed by life's work could become the "hook" for an entire unit or even an entire semester's work. Major portions of the traditional content of a complete unit or possibly even an entire course could conceivably be devoted to activities designed to help students form or develop one of these major subconcepts. If students can relate facts and information (content) to one of these concepts on a daily, weekly, or even monthly basis throughout their school days, they will be able to develop an enduring sense of understanding. This level of conceptual understanding would enable students, as they grow to adulthood, to use these powerful concepts throughout their lives.

Conclusion

Teachers constantly provide students with experiences that assist them in forming mental images of concepts. However, at present, this effort is an unconscious one on the part of most teachers. *Exploring Life's Work* proposes that teachers consciously work at relating classroom activities to global/abstract concepts students need to form to achieve success in their adult work.

All middle-level teachers are currently providing students with examples of work through learning activities and role modeling but rarely step back from a discipline-specific lesson to help students relate this activity to the concept the activity teaches. Young adolescents are capable of understanding abstract ideas when a teacher provides a base of concrete knowledge and/or experiences. Middle-level learners have shown they also have the capabilities to think inductively and deductively. Exploring life's work conceptually helps challenge these students, engages them in the work of learning, and motivates them to achieve higher accomplishments in and beyond the classroom.

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Concept Learning

Middle-level teacher Tom Moro was sitting in his classroom after school, doing some thinking about organization. In the past few weeks, he had observed a number of instances where people had made comments about his students' organization—or lack of it. He wasn't sure that the speakers and his students had the same notion of organization. For example, the principal, Ms. Washington, had asked the seventh-graders to leave an assembly "in an organized fashion." She was dismayed when they left noisily, slammed doors, and ran through the halls. A few days later, Mr. Moro was talking to another teacher who lamented that five students that week had claimed to have lost their homework. "I feel bad because I lost my patience with the fifth one and said that I wasn't surprised—his locker's such a disorganized mess." On Tuesday, Mr. Moro had assigned a research report in his sixth-grade science class on the life stages of turtles. He accompanied the students to the lab resource center to orient them to the facilities and caught himself saying he wanted to "help them learn how the lab is organized."

He realized that the concept of organization was important in his students' lives at home and in school and that, in their adult lives, it would create issues for their work as well. The ability to organize was one of the basic work skills. Mr. Moro wondered what he could do to engage them in exploring the concept. He had read about concept learning in a curriculum guide called *Exploring Life's Work* and had learned about Bruner's Concept Attainment Strategy in a class he had taken on teaching strategies. (Eggen, et al., 1979.) So he knew that he should begin by analyzing his own meaning of the concept.

The Teacher Clarifies His or Her Own Meanings for the Concept

Mr. Moro found himself thinking about the concept of organization often, so he decided to keep a list of the questions about the concept that arose in his mind, as well as some tentative answers.

- **Where did he see instances of organization in his work as a teacher?**

He thought of lesson plans, seating charts, the master class schedule, and grade books and realized that his notion of the work of a teacher was fundamentally bound up with assumptions about and the need for organization.

- **How often did the students think about the need for organization? Was it even an issue for them?**

He knew he thought about it often, but realized how often he had told his classes to get organized without considering whether his students really understood what he meant or whether he understood what they meant.

- **What meaning did the word have for his students?**

He recalled the comments about organization that had spurred his interest, and listed these. Then he thought about the the collections his students kept as a hobby. They often shared stories about their collections.

- **Did they organize their collections? How? Did they realize they were doing it?**

Mr. Moro didn't know how to answer these questions but thought that this might make an interesting point of entry for activities that would let the students explore the concept of organization.

- **What did his notion of organization have in common with his students'?**

He couldn't answer this question either, but figured he'd learn this as he proceeded.

Mr. Moro began to ponder his own meaning for the concept. All of the *examples* he had listed were related to his work as a teacher. Where else was there organization in his life? He thought about the telephone book at home, which organized listings of everyone's phone numbers by alphabetical order within local communities. He looked out of the window of his classroom and saw the teachers' parking lot—another example of organization related to his teaching work. A parking lot allowed people to store their cars in an orderly fashion while not using them. He glanced around the room and saw that the chairs were organized in small clusters from the afternoon's cooperative group learning activity.

His readings about concept learning had helped him realize that he would have to think about why he could consider each of these as *examples* of organization. What *characteristics* did the telephone book, the parking lot, and seats in a classroom share? He wrote down this list:

- Organization imposes order on something that lacks it.
- Organization involves sub-parts (names and numbers in the phone book; parking spaces or stalls in the lot; seats in the classroom).
- Organization groups sub-parts in special ways.

Mr. Moro reflected on these essential *characteristics* of the concept. They seemed quite basic—surely his students knew and understood this much about organization. But could he be sure? He thought about the lockers his colleague had complained about and that he himself had seen. There were many varieties of disarray—not organization he understood it. But what did his students think? How much thinking had his students done about the meaning of organization?

Mr. Moro knew that he'd have to work further on his own concept of organization to help him prepare a lesson plan on the topic. He thought that a discussion of the type he had just gone through—in his own mind—could help everyone come to a better understanding of their own and others' concept of organization. This, he thought, would be an ideal way to bring the concept to life in the classroom and to encourage mutual understanding and discovery. But then he realized he hadn't shared his thinking with another person—even though he would later expect his students to share theirs with each other.

The Teacher Solicits Others in Clarifying the Concept

Mr. Moro knew that his colleague, Ms. Orlando, was also interested in trying to implement concept learning. Even though they had received an education in different areas and from different institutions, he had found their past discussions helpful as he tried to clarify his thoughts, no matter what the topic. In general, they found the diversity in their backgrounds helpful when they wanted to broaden their thinking. So Mr. Moro knew that asking her some questions about the concept of organization would be useful.

One day, he shared lunch with her and took the opportunity to ask her, "Would you say your students are organized?" She responded, "Organized themselves or organized as a class by me?" Her question took him aback; he hadn't thought about this distinction before. He explained his reasons for asking, and soon they were involved in an exchange of ideas about what organization meant to them. As a result of their talk, Mr. Moro added these *characteristics* to his original list:

- Organization facilitates a goal by making a process more efficient.
- Organization is determined by the nature of the parts.
- Organization is a result of planning for and seeking relationships and logical connections.
- Organization is a state or condition.

With these four and the previous three characteristics listed, Mr. Moro felt ready to try Bruner's Concept Attainment Strategy with his students in class.

The Teacher Prepares the Lesson

Mr. Moro's preparation for the first classroom activity began with his decision about which examples he would use to *introduce* the concept. He decided that these would be

- an essay,
- a parade formation,
- a library, and, if the students needed another example,
- the cafeteria lunch line.

He then determined that these would be the nonexamples:

- the classroom waste can, and
- the movement of people in the school hallways between classes

These two nonexamples would help his students begin to see what the concept was not, thus helping them determine the concept's boundaries. It might happen that there would be some argument about why these were nonexamples, and this would further help students develop their concept

Mr. Moro needed a way to present the examples to his students. Knowing how active his group was, he decided the best approach would be an active, hands-on one. He would take them on a tour of the school and point out examples along the way.

The Activity is Tested in Class

His class arrived with their usual energy and enthusiasm, and they were puzzled when Mr. Moro told them that the day's lesson would be different than usual. They were going to explore an idea by taking a walk. He had chosen his words for the directions to the activity very carefully, knowing how important it was for the students to realize they were going to be doing the thinking. They would have to be very observant and willing to share their ideas.

Mr. Moro explained, "I have an idea in my mind, and I'd like you to figure out what it is. It's an idea that will be very important for you in all the work you ever do in your life. That means the work you do now as students, family members, and elsewhere, and the work you will do later as adults in your jobs, at home, and in your communities.

"The point of this exercise is not for one student to figure out what I'm thinking. That would be a guessing game, and it would be a pointless assignment. Instead, the point is for all of you to work together as detectives, piecing together the clues I give you until you figure out what the idea is.

"Here's what we'll do. I'll show you some things that come under my idea, and I'll show you some things that don't come under my idea. The examples that do come under my idea I'll call 'examples,' and the examples that don't, I'll call 'nonexamples.'

"You'll have to look closely at the examples to figure out what they have in common and what they can tell you about what my idea might be. The nonexamples will help you because they'll tell you how my idea might be distinguished from other ideas that are related but not the same.

"This is going to be a silent walk. Are you ready to start?"

Mr. Moro observed Lisa and Bryan rolling their eyes in evaluation of the assignment. Developmentally, they were both ahead of the rest of the class, and they were quick to reject any activity they considered childish. He felt sure they would be caught up in the activity when they realized it was a difficult and challenging one. He then noticed Matt's raised hand and responded to his question. "How are we supposed to say what your idea is if we can't talk?" Mr. Moro explained that they would stop at each of the examples and he would start the discussion, but that they should be quiet when they were walking from place to place so as not to disturb others.

Choua's hand went up. "What do you mean by nonexamples? I don't understand." Mr. Moro repeated his definition, but Choua was still confused. Mr. Moro wasn't sure about how to respond, so he asked the students to be patient and he would try to explain further during the lesson. They were anxious to be moving so they agreed to wait.

His first example was the essay. He distributed a copy of a student essay to all the students and said "This was an example of my idea." The students read the paragraphs, and Mr. Moro asked, "What do you think my idea might be?" The room was quiet as the students puzzled over the paragraphs. Mr. Moro was beginning to feel uncomfortable with the silence but resolved to be patient. After about two minutes, Hazel asked, "Is your idea a story?" Mr. Moro responded, "No, that's not my idea, but will you share with us how you came up with that thought?"

"The essay was about some kids playing checkers," Hazel said. "In English class we learned that stories were narrative passages describing character and plot development over time." Mr. Moro thanked her for getting them started and asked the rest of the class to consider what Hazel had said and the thinking process she used.

"We're ready to go outside now," said Mr. Moro, and he took them outside to the football field, where, as he had ascertained beforehand, the band was practicing its parade formations. He stopped the group, let them watch a bit, then asked them to listen up. "This is my second example."

"You mean those people in the band?" asked Lisa. "How can they have anything to do with the story?"

"That's what you have to figure out," he replied. "Remember, they are both examples of my idea. Think about what you see in both of the examples."

Matt offered, "Is the idea 'game'? The story was about a group of friends playing a board game, and the band's on a football field."

"Game is not my idea," Mr. Moro responded. "But that's a good piece of reasoning. Your thinking about the examples can help us look at the examples again in a different way. What else do you see in common for the two examples?"

Mr. Moro could see that the students were starting to become engaged in the exercise. He had everyone's attention—even Lisa and Bryan were chatting with other students—and he felt it was time to add a nonexample. He took the students back into the school building and stopped the group next to a full waste can. "This is a nonexample. It is not an example of the idea I have in my mind, but it tells you something about the idea."

"This nonexample is a container," observed Maria. "The other examples didn't have containers."

"The band had a director," said Ty. "And I know somebody wrote that story. Maybe that has something to do with the idea—that somebody did it."

Bryan finally spoke up. "A lot of people threw things into the waste can. Is that why this is a nonexample?"

Mr. Moro was excited by the dialogue that was beginning between the students. "Let's consider what we have so far." He asked Shoshana to summarize what they had discussed so far. He could tell that the students were listening and were engaged in thinking about the situation.

"Let's walk to our next example," he said and led them to the library. "Look around the room. This is an example of my idea," he announced.

"Rows of books!" shouted Lisa. "Rows of marchers, rows of checkers! Is the idea rows?"

Mr. Moro dropped his voice to a stage whisper. "No, the idea itself isn't rows, even though we're in a library, Lisa." She laughed, and he said in a regular voice, "But rows is another example of the idea, just as library is. And you've given us more to think about."

"There are cabinets with drawers that have the card catalogs in them," said Ty. "Does your idea have something to do with order?" Mr. Moro asked Ty to explain. "Order in the essay—paragraphs and sentences and narrative. Order in the band—marching to the beat of the music and playing at the same time. Order in the card catalog and in the books on the shelves."

Cassie interrupted. "Right. And no order in the trash can!"

Rick spoke up, clowning. "My home room pizza order was in the trash can!" The students all laughed, and Mr. Moro let them carry on for a few seconds before reminding them that others were trying to work in the library.

Just then the bell rang for the first lunch group to leave the cafeteria. The students could see people moving through the halls as they looked out the library windows. Mr. Moro pointed out that this was a nonexample. The students concluded that randomness, crowdedness, and bustle set this nonexample apart from the examples. They began to see more distinctions between the two categories—and consequently could see the features of the examples more clearly. Mr. Moro decided not to walk them through the lunch line after all, but to return to the classroom.

The Teacher Follows up on the Analysis

Back at the classroom, Mr. Moro took some time to summarize. "What you've done is develop a list of characteristics and noncharacteristics for my concept out of a series of examples and nonexamples I provided and you have started to expand on." He listed these features on the baord. "And you're all terrific because you've done this without even knowing what the concept was!" he said. "Now I'm going to tell you what the concept is. It's the concept of organization."

"I told you," wailed Maria to Ty, "and you said it couldn't be because organization isn't about things like the band and the trash can."

"She told me," said Ty. "It's true."

"Remember, Maria," said Mr. Moro, "that the point wasn't for one person to guess and get an A. The point was for all of you to share the process and help each other along. But let's give you a hand for guessing so early." He applauded, and the students joined in. "Now, I want to hear more about Ty's idea that organization isn't about marching bands and trash cans."

"I thought the idea was bigger than that," said Ty. "You know—organization is like in businesses, where you have the CEO and the vice presidents. Or you organize a benefit to raise money for a cause. I didn't think how organization had to do with school."

Maria spoke up. "But anything that's orderly is organized. And somebody organized all those things—those examples. Organization is a big word for order!"

Now all the students were curious about organization, and Mr. Moro asked them to give him more examples and nonexamples of the concept now that they had learned to think of it a little differently. They began shouting out examples and nonexamples around the classroom, in their homes, and in their neighborhoods. Mr. Moro found this exciting, especially when students disagreed about whether an item should fall into one category or another and discussed the examples in ways that extended their lists of characteristics and noncharacteristics.

Class time was nearing an end so he decided to ask them to look for examples and nonexamples throughout the rest of the day and to be prepared to talk about them during the next class period.

When the students left, Mr. Moro reflected on what had occurred during the lesson. He had noticed participation from a variety of students and more questioning than usual. They all enjoyed the walking tour. There seemed to be genuine interest in the homework. He knew his next challenge would be to facilitate the discussion tomorrow as the students brought their own examples and nonexamples and the group worked to discuss and further develop their meaning for the concept. Then Mr. Moro would have to be ready with key questions that they could consider, as a group, about organization, its impact on their lives, and how it cut across all sorts of activities. He would review the notes he had made and develop some ideas on how to proceed with future classes that would build on today's. This would be a challenge, but Mr. Moro felt energized by his students' enthusiasm and convinced that this curiosity as well as the concept teaching and learning was what life's work was all about.

He also began wondering how he would be able to assess how well each student had an accurate and relatively complete concept of organization. Should students be able to explain *why* a new example represents a concept? Should they be able to generate their own examples and nonexamples? Should Mr. Moro expect some of those chaotic lockers to become more organized? At that point, Mr. Moro realized he had become so engaged in his thoughts that he had nearly missed his lunch period. He couldn't wait to share the morning's happenings with Ms. Orlando.

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Getting Started With Concept Learning

Teaching using a conceptual approach requires more time than teaching facts or skills. Teachers who wish to help their students develop a meaningful conceptual "foundation" in life's work will need to devote a minimum of 45 class periods to that goal. A richer, more complete experience, and a much better foundation, would require more time and the involvement of more than one teacher. Each school will need to determine the extent to which all of its teachers will share responsibility for helping students develop concepts surrounding life's work. Middle-school students should be given more than incidental exposure to important concepts.

The following example demonstrates how a teacher might begin helping students understand life's work using a conceptual approach. This 45-class-period example has been structured to illustrate the skills necessary to do a concept analysis. Eliminating parts would result in an incomplete understanding of these concepts.

Stage I

As indicated in Classroom Scenario B, teachers must experience concept analysis for themselves and clarify their meanings prior to attempting to help students do the same. This prethinking experience is important not so teachers can teach their own concept, but so that they can ensure that students will develop a broad rather than a limited view.

Concept learning experiences are most likely to be successful with 11- to 15-year-old students if they are student centered (developed with a focus on questions and concerns of immediate interest to young adolescents) and conducted in cooperative learning groups.

Before engaging in discussions about life's work, a teacher could teach the intellectual skill of concrete concept analysis using a familiar concept like "insect" or "parallelogram." This is a critical step since students need to be conscious of the thinking process they will need to use. They also need to be aware of when this type of thinking is appropriate and necessary. These preliminary experiences will help assure that students are developing a concept and not merely learning information.

Experiences should be introduced in such a way as to pique curiosity and invite questions; an inductive approach would be effective. A teacher should not lecture to deliver ideas. Lecturing may tend to reinforce the notion that what is being learned is information, not a way of thinking. These initial activities would take a minimum of about ten class periods; more time would be desirable but not at the expense of what follows.

Having taught the intellectual skill of concept development, the teacher could begin by simply exploring the word "work" with students, asking them what comes to mind when they hear the word. Where have they heard the word mentioned? By whom? What experiences have they had related to the word? What does it refer to? Who engages in work? Learning experiences would lead students to understand that work could mean thinking, doing nothing, having fun with friends, or simply relaxing. Learning activities should lead them to discover that there are different ways to be productive, different products to be produced, and different valued ends or outcomes resulting from different situations.

Opportunities to hear a variety of resource people such as artists, workers in the trades, musicians, farmers, students, parents, and professionals talk about how they work and what they produce can help broaden students' views. Interviews with these workers can further expand student understanding. Everyday activities students engage in can help them recognize how they themselves are productive. Hands-on activities can simulate how they are, or could be, actively engaged in life's work.

Stage II

Stage two of getting started with concept learning would include a systematic exploration of the major subconcepts subsumed by the broad concept "life's work." During this phase it is essential that the teacher choose activities that help ensure students form a broad and balanced view of each subconcept. This is achieved by selecting activities that guide the learner through an exploration of how each concept applies to all of the influential aspects of society. For example, a student would compare and contrast the meaning of "communication" as it applies to the work of family, business, industry, and other life roles. Sample learning activities appear in Section 8 of this guide. These may be used as a point of departure for other activities.

The weekly lesson plan should include one day for an overview of each concept and a second day to explore the meaning of that concept as it applies to each of the influential institutions of society and how that concept has evolved over time. A third day would focus on exploring how each concept may change in the future and the possible consequences of each option or alternative.

Learning activities should give students an opportunity to work with typical processes and tools used in each of the influential institutions of society. Emphasis should be on the use of one's *mind* as a tool to learn how it relates to the use of another tool. Students would guide themselves through the activities with the aid of instructions and manuals that accompany the processes and tools; the teacher's role would be to facilitate, not to demonstrate, learning. Sample processes and their related tools to be experienced might include conditioning/microwaves, communication/lasers, processing data/word processors, etc. Questions a teacher might ask to summarize these experiences would be: When does this process/tool help us to be more productive? When doesn't it help? What determines whether a process/tool will enhance our life's work?

This would be in contrast to teaching students the function of each part of a tool, all of the terms associated with the tool, and emphasizing the qualities and characteristics of a finished product. The emphasis here is on helping students to see that their mind is an important tool and that, without a conscious awareness of their own thinking, the potential of processes and tools is minimal.

Experiences provided during this phase should also help students begin to recognize how knowledge gained in other courses such as math, foreign language, or English relates to their life's work.

Stage III

In the third stage of this example, students would be given opportunities to clarify the characteristics and noncharacteristics of work. Learning experiences should permit them to explore the variety of ways people work. Activities would be designed to help them begin to explore their personal or individual work traits or skills in cooperative and competitive environments, working in teams, or competing to produce something while cooperating as a member of a team.

A major goal of this stage is to make students aware that products of work can be abstract and/or concrete and that they are in control of their life's work. They need to begin to recognize that

- to be truly productive they will need to be able to work with others.
- everyone has a current work role.
- they can develop and enhance their life's work as students.
- their personal interests and aptitudes ought to play a major role in their choices pertaining to work.

The process will not be the same for every student. Learning, exploring, and experimenting is how each will discover his or her way.

A conceptual approach to learning about life's work will permit students to develop a feeling for what life's work means to them, no matter what their current life situation happens to be. The ability to develop one's own meanings will have future implications as society and work opportunities change, allowing students to make adaptations and accommodations to maintain a productive role in a rapidly changing society.

The Nature of the Middle-Level Learner

Unique Education for a Unique Time of Life
Middle-Level Curriculum Should Consider Developmental Change
References

Unique Education for a Unique Time of Life

[I]f we set out to design a school totally inappropriate for the development of young adolescents, we could not find a better example than most middle-junior high schools.
—Deborah Meier

The typical middle-school learner blends imagination, questions, curiosity, and creativity in a highly energetic, deeply social personality. Middle-level students' developmental needs dramatically influence their learning needs, and recognition of this differentiates the middle school from the junior high or high school. Early adolescence is a special time in students' lives, one that requires a unique form of education. The most effective middle-level education will provide educational opportunities that differ significantly from those provided for older adolescents.

The late Hershel Thornburg believed that middle-school programs should incorporate a sensitivity to the special needs of this unique population. He wrote, "...[T]he extent to which the middle school becomes a viable educational alternative to traditional school models is directly proportional to the ability of middle-school educators and researchers to identify and investigate the developmental needs and learning capacities of the students it serves." (cited in Brazee, 1987.) *Exploring Life's Work* represents an attempt to help educators respond to the unique educational needs of the middle-school learner.

"Transescent," "early adolescent," and "young adolescent" are terms currently used to refer to students in this stage of development. Donald Eichhorn defined this stage as beginning prior to the onset of puberty and extending through the early stages of adolescence. Since puberty does not occur at the same chronological age for all individuals, transescence or early adolescence is the stage that represents the onset of the many physical, social, emotional, and intellectual changes that occur prior to puberty. These changes stabilize in later adolescence. (Eichhorn, 1966.)

Because of these diverse and intense changes, the young adolescent learners are undergoing a period of dramatically transformations. Their needs and characteristics are unlike those of any other cohort of students. Researchers have found that, during this stage, youngsters undergo more developmental change than at any other time of life, except the first year after birth. *Exploring Life's Work* considers these changes—and the needs they inspire—as falling into three broad categories: social and emotional, intellectual, and physical.

Social and Emotional Needs and Changes

During the years of early adolescence students develop values and morals. This development has profound effects on decisions affecting work that students make both at this stage and later. These are the years when youngsters lay the entire foundation for their adult personality, concepts, standards, and values. They "crystallize their beliefs about themselves, firm up their self-concept, their values, and their standards—the things which are the ultimate determinants of their behavior," according to John Lounsbury (1988). It is important for schools to present middle-level students with as many exploratory opportunities as possible. Decisions they make at this age affect themselves, others, and ultimately all of society.

A great deal of attention currently focuses on the social milieu in which middle-level children function. Young adolescents are acutely aware of people around them, particularly those in their peer group. Recent information on peer groups indicates that, for the majority of the time and in the majority of these groups, the children who belong to them encourage each other to engage in socially and academically acceptable activities.

Because the peer group is so influential in prompting its members, young adolescents tend to learn best in social situations. The more their education is structured around these situations, the more they will benefit from it. Middle-level children are highly energetic and like to have fun with their friends while they learn. They tend to respect and respond to others who understand their energy and gregariousness and who try to accommodate these traits. This is not to say that young adolescents respond socially *only* to those of the same age. In fact, young adolescents value the actions and advice of significant adults as much as they value the information they get from their peers. Teachers who build upon this trust in the classroom can derive excellent results for everyone concerned.

Middle-level teachers also must bear in mind that, like all children, young adolescents face cultural and societal demands unique to their period in history. The happenings of society—at the peer group level and in larger circles, such as the community, nation, and world—are of great importance to young adolescents and raise numerous questions and concerns in their minds. This is why *Exploring Life's Work* makes student questions and concerns the heart of curriculum. Education that isn't relevant to their concerns will bore and even alienate young adolescents, precisely at the point in their lives where they are capable of deep thought, independent inquiry, strong curiosity, and learning how to learn.

This stage of development can be emotionally stormy. Some of the particular behaviors observable in middle-level children—such as physical risk taking—have been linked to hormonal activity and other biochemicals their bodies produce. To maximize on this tendency and to let it energize the middle-school classroom, teachers should strive to create learning activities that permit comparatively safe opportunities for social and emotional risk-taking.

Passive and aggressive behavior of middle-level children has likewise been attributed to biochemicals produced during this stage of development. This noticeably affects their emotional and social behavior. Their emotions tend to be very sincere and greatly pronounced, and they become emotionally involved with and committed to causes. They need a great deal of educational guidance to tie their idealism to realistic goals and to see how activities *they choose* can help them achieve those goals.

At the middle grades level, students enter a developmental stage where their individual identity is formed in relation to their peers and the adults who play significant roles in their lives.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Intellectual Needs and Changes

As more dependable and practical research on the psychology and physiology of early adolescence is produced, educators are becoming more aware of the intellectual needs of the middle-level learner and of the most effective teaching methods for this group of students. At this stage, children want to know how everything they learn about applies to their own lives.

They constantly ask how every learning activity relates to their everyday questions and concerns, and they want to know how they will benefit from learning it.

While some members of an earlier generation of educators may have viewed this curiosity as stubbornness, it is now clear that what really motivates such "self-absorption" is really young adolescents' desire to understand how one topic, idea, or subject connects with another. The authors of *Exploring Life's Work* believe that this point cannot be made too strongly, for it is what justifies this guide's entire approach.

The majority of early adolescent learners are "transitional thinkers." Their thinking skills and approach to life are quite concrete, but they are beginning to experiment with and experience the delights of formal operational thinking. Studies have shown that a very small minority of students in the middle grades accomplish formal thinking. In fact, very few in the secondary grades operate at the formal level, but students at both levels are starting to have flashes of insight or brilliant ideas, and these comprise the first step toward formal thinking. But teachers must understand that all young adolescents—except those with severe cognitive disabilities—can think and reason at high levels, even if formal operational abilities have not yet developed.

Physical Needs and Changes

Most middle-school students are at the onset of puberty, and, as noted earlier, all of the rapid and perplexing changes in appearance and behavior can be attributed to puberty's onset. Although there are some exceptions, girls tend to develop approximately 18 to 24 months earlier than boys. This gender-based difference in the rate of development has behavioral effects that are readily observed, although it also create some very subtle effects as well. Overall, girls increase in manual strength earlier than boys do, causing social difficulty for both sexes since society continues to reinforce the outdated notion that boys should be stronger than girls. Girls often become frustrated and bored with boys their own age, viewing their behavior as "childish," and they seek friendships with older boys. Girls complete the major portion of their growth spurt about the time they are high school freshmen or sophomores, while boys may continue to grow until age 22.

[Young adolescents] are youngsters whose friends change every day; who want parenting only upon demand; who are both curious and self-conscious; and who have an answer for everything, often without the knowledge to back it up.
—Anne C. Lewis

During this important developmental time, children gain up to 50 percent of their ideal adult body weight and 20-25 percent of their adult height. The long bones of the body—those located primarily in the arms and legs—grow very rapidly between ages 10 and 14. They tend to grow at a faster rate than their surrounding muscles can develop. Such rapid bone growth can make young adolescents appear extremely awkward and lanky. They will often create situations that will allow them to extend their arms and legs, to stretch developing muscles over newly forming bones. Their bodies may grow so quickly that they don't have enough time to learn to operate them in a smooth and coordinated fashion. And because muscular development constantly seems to be lagging behind bone growth, young adolescents' muscles do not have the smooth, "filled-out" appearance they will have by the time students reach the upper secondary level.

Middle-Level Curriculum Should Consider Developmental Change

The secret of education lies in respecting the student.
—Ralph Waldo Emerson

The curriculum recommended by *Exploring Life's Work* is geared specifically to middle-level learners. Because concept learning, cooperative group learning, and exploration respond so well to the learning characteristics and needs of middle-level learners, these approaches are essential elements of a program designed to help students explore life's work. Furthermore, they respond to these students' unique social and emotional, intellectual, and physical needs.

Educators must be familiar with and use appropriate strategies to offer these children an effective education. As noted in the first paragraph to this chapter, the use of appropriate teaching strategies, based upon recognition of the unique needs of the young adolescent learner, is what differentiates a middle school from a junior high or high school. Curriculum planning must take this into account, for a middle-school curriculum that is a watered-down version of the senior high one will not be effective.

Concept learning permits middle-school learners to examine the "why" of things rather than to memorize isolated facts. Teachers who use concept learning encourage thought and inquiry and actually teach students how to learn. Concept learning, cooperative group learning, and exploratory learning all take advantage of young adolescents' natural curiosity.

To be effective, middle-level learning activities must capitalize on the highly social culture of the middle school. Cooperative group learning takes advantage of the fact that young adolescents learn best in social situations and seek positive peer group influence. Cooperative activity works the best in middle schools when students have the opportunities to move around, have fun, and take risks in a forgiving setting that helps them learn from their mistakes.

By using student questions and concerns as a source of curriculum, educators respond to young adolescents' need to see how everything they learn about applies to themselves. Concept learning activities can be designed to help learners respond to these questions and concerns as well as to help them form or develop key concepts. This is the best strategy available for helping learners see how topics, ideas, or subjects are interrelated or interconnected. Concept learning gets students emotionally involved in their own learning and permits them to make connections between what they learn and their own lives. All of the ultimately contributes to self and social understanding.

While middle-school students appear to be preoccupied with each other and the present, they also want to think about and explore what the future holds for them. Making their concerns and questions and the broad goals of K-12 education the organizing features of curriculum ensures effective education. Middle-school students need to be guided systematically as they learn to think about their futures. *Exploring Life's Work* offers a means to help them explore and observe what adults do after completing their formal education—which is no longer easily observable, in a postindustrial, information-based economy.

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Table 4

Age-Appropriate Capabilities, Skills, and Behaviors of Young Adolescents

Emerging Physical and Psychological Capabilities	Micro-System Integration	Macro-System Integration	Identifying Behaviors	Developmental Correlates	Expected Functional Skills	General Learning Needs
Formal operations Abstract and logical thinking Self-concept of intellectual and social identity Initial introspection and utilization of reflex knowledge Time-projective skills Resolution of sexual identity	Identification of self-concept and self-esteem in family, school, peer contexts Sense of potency to influence personal and social systems Acknowledgment of personal, intellectual and social capabilities Affiliation with reference groups Awareness of parameters of independence Sex-role orientation	*Primary* 1. Family 2. Peer group 3. School 4. Community *Secondary* Cultural and status affiliations • Local media and politics • Local laws and mores (social and religious) • Local concepts of work and productivity	Reacting Revolting Screening Applying Changing Sorting Judging Coping Modeling Choosing Preparing Valuing Categorizing Classifying Distinguishing Cooperating	Initial formal operations Individual and situational role taking (Piaget) Validation of self-efficacy Self-referent thought (Bandura) Social cognition Meta-cognitive knowledge (Falvell) Interpersonal concordance Esteem (Kohlberg) Self-respect/esteem (Maslow) Conscientiousness (Loevinger) Application, valuing (Bloom) Convergent/divergent (Guilford)	Problem-solving techniques Application of content knowledge Sense of responsibility to self and others in social contexts Active sense of self and social esteem Evaluation of self in personal and social situations Sense of cooperation and collaboration Self-motivation and reinforcement techniques Value identity and monitoring Sex-role orientation	Learning how to improve study skills Learning about problem-solving processes Clarifying personal, social, and religious value systems Learning how gender bias affects educational and social roles Getting feedback on personal achievements and performance Establishing balance between cooperation and independence Learning about decision-making processes Acquiring a sense of control and responsibility for personal behavior Developing social adaptation coping techniques

Source: Adapted from page 108 in *School Counseling Programs: A Resource and Planning Guide*, Madison: Wisconsin Department of Public Instruction, 1986.

Implementing the Exploring Life's Work Approach

A Goals-Centered Curriculum
Creating Curriculum Ownership
Encouraging Wide Participation
Selecting Resources for Change
Pilot-Testing Major Changes
Writing the New Curriculum Guide
Establishing the Implementation Plan
References

Urban schools are often unfocused, . . . and between grades six and ten many of them are not organized to meet students' developmental needs.
—M. Hayes Mizell

This guide proposes a new conception of how education for employment, or "preparation for work," can achieve its legitimate place in middle-level curriculum. Educators who seek to implement this new approach will note that it transcends much current middle-level curriculum structure and practice. The existing fragmented, subject-centered middle-level curriculum is so deeply rooted in educators' conventional ways of thinking that any new view of curriculum seems almost impossible to imagine. (Beane, 1990.) Educators must somehow move beyond what traditionally has been the curriculum of the middle-level school.

Curriculum must be reorganized if it is to help young adolescents form an appropriate concept of "life's work," one that can evolve and change throughout their lives to guide them as they make important decisions about schooling, employment, career interests, and civic and family involvement. *Exploring Life's Work* proposes a multidisciplinary approach taught from a conceptual and integrative point of view and based on concept learning. Individuals involved in curriculum development will need to begin by rethinking the generally accepted goals of K-12 education.

A Goals-Centered Curriculum

An explicit set of goals must significantly and visibly influence middle level curriculum if that curriculum is to have any lasting effect or meaning. The goals of K-12 education are

1. preparation for continued *self-development* (learning how to learn and acquiring lifelong learning skills),
2. preparation for *employment* (acquiring professional or vocational work attitudes and skills), and
3. preparation for *citizenship* (learning about the cultural heritage and the political, economic, and social systems in which we must learn, work, and live). (Hartoonian, 1989)

These goals, or some variation on them, should shape curriculum at the middle level, and all instruction should be designed to achieve them. Furthermore, if educators believe students' needs are more important than the transmission of some predetermined body of content, then the questions and concerns of immediate interest to young adolescents ought to have much more influence on curriculum than they have had in the past. *Exploring Life's Work* suggests how the goal of preparation for employment and student-centered concerns can begin to influence the creation of middle level curriculum.

For teachers and curriculum planners to have success in implementing the curriculum approach advocated in this guide, they will have to analyze their own assumptions about the nature of middle-level curriculum. The authors of *Exploring Life's Work* believe it is important for teachers and curriculum planners to conclude that

- broad conceptual understanding of life's work is a major end of middle level curriculum.
- depth of understanding is more important than coverage of content.

- student concerns and questions have a legitimate role to play in shaping middle level curriculum.
- a fragmented (and typically incomplete) discipline or subject organization is not optimal for helping students appreciate and explore life's work.
- helping students explore life's work—as well as citizenship and lifelong learning—is the responsibility of everyone in the middle school. It is not a responsibility limited to a few disciplines.
- exploration is an approach that should influence the nature of all middle school curriculum.

An understanding and acceptance of all of these points will contribute to a student-centered, exploratory middle-level curriculum grounded in concept learning.

Implications for Vocational Education

The very nature of work today, the ways in which work is changing, and the extent to which citizenship and lifelong learning are an essential part of work all antiquate former distinctions such as vocational versus general education. Although it is not the purpose of this guide to suggest how to achieve the reunification of K-12 education, the authors assume that individuals who wish to implement this curriculum will give some thought to how vocational and general education might be combined. If middle-level education persists in being organized according to vocational versus general distinctions, this guide's proposals will have very different implications for the two strands as educators.

Although preparation for work is the primary goal of vocational education, is it not the only goal—nor should it be. Middle school vocational educators should play a leading role in helping young adolescents develop a concept of life's work via exploration and cooperative group learning. To fulfill this leadership role, vocational educators will need to clarify their vision of what constitutes appropriate middle-level curriculum. Curriculum Planning Tool 2 on page 96 includes a checklist of questions that should guide specific curriculum decisions.

Everyone seems to know that in the real world, all the major problems are interdisciplinary and all the solutions are interdepartmental, interprofessional, interdependent, and international. Yet our institutions cling to a heavy bias against breadth . . . .
—Harlan Cleveland

Implications for Other Than Vocational Education

Wisconsin's Education for Employment initiative asserts that preparation for work is a legitimate goal for *all* K-12 education, not just vocational education. In order for students to achieve what was envisioned by the initiative, all educators must routinely reflect on life's work as a legitimate part of all coursework—whether "vocational" or "general." This will allow educators to develop a meaningful and complete concept of it. Thus all educators—not only those involved in vocational education—must share responsibility for infusing education for employment into their curriculum.

Unless an entire middle school is committed to converting to a conceptual approach "other than vocational education" areas will need to infuse into existing curriculum the strategies advocated by this guide. In addition to needing to deliberate on the questions that appear on pages 96 and 97, this larger group of educators will have to begin grappling with even broader questions, such as these:

- What are the district's or school's goals for K-12 education? Do these goals significantly and appropriately influence curriculum and instruction at the middle level?
- Is the district or school currently making a significant contribution to the goal of focusing on preparation for work (or its equivalent)?
- Are young adolescents capable of applying what they are learning in ways that they will be required to do when completing their formal education?
- Do young adolescents understand their "other than vocational education" aptitudes, abilities, talents, capacities, and interests sufficiently to allow them to make important educational decisions?

Creating Curriculum Ownership

The success of the *Exploring Life's Work* curriculum, like any other, depends on what proportion of the staff "own" it. The greater the number of teachers and administrators who are involved in deliberating on these questions and in developing curriculum, the greater its chances of success. The first step in creating ownership is to build consensus around crucial issues such as

- the need for change in curriculum and instruction.
- the need for and benefits of a conceptual approach to middle-level education.
- the importance of helping students answer their own questions and address their own concerns.
- the need to make instructional content less fragmented.
- the fact that all middle-level educators share responsibility for educating students for employment and for meeting all of the goals of K-12 education.

1. Change is a process, not an event.
2. Change is accomplished by individuals.
3. Change is a highly personal experience.
4. Change is best understand in operational terms.
—Hord, et al., "Taking Charge of Change"

This means that effective, meaningful curriculum development needs to begin with a process of questioning, dialectic, analysis, and discussion. In general, the purpose of the development phase (phase one in the model) is to reach agreement among the curriculum developers and to obtain as much input as possible from those who will have to implement the program.

Struggling early to achieve consensus on these fundamental issues increases the likelihood that the resulting written curriculum will become a living, exciting, and useful document. Such a document gives direction to student learning, unlike a manual that remains buried in third drawer of the teacher's desk. Curriculum developers should set aside time and create an environment in which teachers can openly debate and resolve questions which, left unattended, can subvert the usefulness of any curriculum project.

Encouraging Wide Participation

Although wide participation in creating the new curriculum is certainly desirable, a smaller group must have responsibility for gathering data, organizing it, and writing the curriculum document. This curriculum committee should include but not be limited to the teachers working at the secondary level, guidance counselors, and teachers from the middle-level school.

It certain key points in the process, it is also desirable and helpful to include on the committee representatives from the school board, the Education for Employment Council, vocational advisory committees, and community members. People from outside the school can provide valuable perspective on life's work issues and the type of balance that the life's work curriculum itself will ideally build upon. Having board members and citizen representatives on curriculum committees can provide crucial support for budget items—such as new materials or staff development opportunities—the team recommends later in the curriculum development process.

Those involved developing an Exploring Life's Work curriculum will probably be pleasantly surprised to learn that staff members already use some of the methods and materials advocated by this guide. Thus it would be a grave mistake for the curriculum planning committee to ignore expertise that already exists. The committee can incorporate what family and consumer education teachers know about the work of the family and about teaching thinking skills, how technology education teachers are using cooperative group learning, the ways social studies teachers incorporate concept learning into the existing curriculum. Kernels of the program the committee envisions will exist even in the most traditional program. The entire curriculum process will need to identify, recognize, and meaningfully use the interest and expertise of those involved in the current program.

Planners need to bear in mind that staff members will not be equally affected by curricular change. The curriculum team needs to consider concerns, feelings, thoughts, and reactions that staff members will have about curricular change. Only people can bring about change, and a failure to involve everyone in developing a new curriculum can endanger its ability to succeed.

Individual school-based committees should [communicate] with decision makers and other actors in the community, both to win their initial support and to provide them with information about school goals.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Selecting Resources for Change

The curriculum team needs to gather information about available materials, resources, and strategies and focus attention on the program's existing human resources and the strategies they are currently using. New methods and material should be compared with old ones so the team can determine which best match program goals and desired outcomes. Most districts or schools will need to purchase some new materials and require teachers to use some new methods they may be at first find uncomfortable. All teachers who might be asked or expected to use new methods or materials should be invited to participate in such planning sessions so that they will feel a se[illegible]f ownership of the new curriculum.

If the team finds it has exhausted its own expertise or if it desires an outside view, it can solicit experts in the field to serve as consultants. Such consultants can explain exemplary programs, answer questions about implementation, predict difficulties, identify successes, and so on. Team leaders can contact the Department of Public Instruction, university professors, or neighboring educators for suggestions of potential consultants. Specific information about the district and its specific needs will help consultants provide more helpful service.

It is much easier to be critical than correct.
—Benjamin Disraeli

Field observation is another approach to rounding out the team's view of the possibilities for the new life's work curriculum. Team members can benefit from visiting other districts to observe programs and materials. They can also benefit from seeing concept learning, cooperative group learning, or other new strategies being used successfully by their peers.

Broad representation is also desirable for awareness sessions designed to inform or apprise others of what is being planned or of what progress is being made in developing the new curriculum. Smaller sessions can serve to meet the specific needs of individuals or small groups involved in the process or to build upon the expertise of team members.

Pilot-testing Major Changes

Before implementing large-scale curriculum modification, districts should test the changes in a selected sample of classes. This helps underscore the earlier point that some staff members may already be using portions of approaches to the life's work curriculum (such as concept learning, cooperative group learning, and exploration). By engaging the cooperation of enthusiastic teachers, the team can be assured of meaningful feedback.

Staff members involved in the pilot program can also serve as inservice leaders when curriculum changes are fully implemented. Thus the district should select articulate leaders who have credibility among their colleagues. Finally, feedback from pilot program staff members and students must be incorporated into the final curriculum document. In this way, staff members see that their suggestions are valuable, which enhances teachers' sense of ownership of and enthusiasm for the new or revised curriculum.

Questions to Guide Implementation of an *Exploring Life's Work* Curriculum

Educators can build curriculum like that espoused in this guide by deliberating on broad questions that put young adolescents' needs and interests at the center of curriculum decision making. Curriculum planning committees and individual teachers ought to let questions such as the following guide them as they make decisions about curriculum and instruction. Responses to these questions will generate more questions throughout the process of curriculum development and implementation, thereby ensuring the curriculum is a living, evolving one.

Student Concerns, Interests, and Needs

1. What questions and concerns do young adolescents currently have about themselves and about work?

An informal survey can determine or verify student questions and concerns. Open ended questions can elicit student responses that will help curriculum planners. The Middle Level Curriculum Project (McDonough, et al., 1991) used a survey that included items like these:
—When I finish school I hope I can....
—Ten years from now I hope I am prepared to....
—I would like to know more about....
—I am best at....
—I have difficulty....
—I admire people who....
—I find myself daydreaming about....

3. Do young adolescents recognize and understand their natural abilities, talents or capacities, and interests well enough to make sound educational decisions?

Assessing students' current level of self-awareness will help the curriculum planner design meaningful curriculum that is appropriately focused on student needs, questions, and concerns.

4. Do young adolescents adequately understand how the course, program, and extracurricular decisions they will need to make during high school will affect their life's work?

Responses to this question will help planners assess the extent to which young adolescents can currently identify ways they will ultimately have to apply knowledge.

Changing Nature of Work

1. What thoughts, notions, ideas, changes, etc., are likely to have dominant influence on paid and unpaid work in the twenty-first century?

This question lets planners determine the *key concepts* that can guide curriculum planning, such as interdependence and teamwork.

2. How will young adolescents' work decisions differ from those their parents and grandparents made? What are some of the factors that affect those decisions?
Responses to these questions will help the curriculum planner(s) focus on the decision making skills and concepts students will need to be actively involved in their own education planning.

Curriculum Organization and Focus

1. Does the school's curricular organization primarily reflect long-standing traditions or or does it focus on contemporary student needs?
By answering this question, planners should be able to determine whether meaningful connections and big ideas are the focus of existing curriculum or whether the curriculum is fragmented, based on the imparting of facts, and organized around outdated distinctions such as "vocational" versus "general" or "academic."

2. Does the curriculum encourage students to spend time pursuing deep and thoughtful analysis of important concepts rather than skimming the surface of numerous issues to ensure that the entire syllabus is "covered" before the end of the school year?
Planners can use this question to determine the need for changing the fundamental nature of existing curriculum and instruction.

3. Does all curriculum provide exploratory learning experiences?
The new paradigm of exploration is discussed in Section 4 of this publication. The curriculum planner can use the Exploratory Learning Scales on page 55 to help answer this question.

4. Can the broad scope of life's work be adequately explored within the constraints of the school's traditional subject areas? Are there significant gaps in existing content resulting from the underrepresentation or nonrepresentation of some disciplines?
Answering these questions may help curriculum planners determine whether the current scope of their curriculum development initiative is adequate. Significant gaps may mean that students will be unable to develop broad concepts. Answering this question may help curriculum planners determine whether the current scope of their curriculum development initiative is adequate. Significant gaps may mean that students will be unable to develop broad concepts.

5. Do curriculum and instruction respect the fact that virtually all middle-level students are capable of thinking and reasoning and learn best when challenged with rich content?
Curriculum and instruction that do not focus on big ideas and student needs will not actively involve young adolescents in their own learning and will miss the opportunity to capitalize on these students' special time of life and development.

Writing the New Curriculum Guide

Wisconsin state law (section 121.02(1)(k), Wis. Stats.) requires every district to produce a sequential written curriculum. Content and format need to be consistent with Wisconsin's administrative rule (PI 8.01(2)(k), Wis. Adm. Rule). More detailed information on Standard (k) is available in *Wisconsin Educational Standards: A Blueprint for Excellence*, published by the Wisconsin Department of Public Instruction (Bulletin no. 91470).

Teachers need to know that curriculum is subject to further and ongoing change; it is not permanent. The written document might be kept in a ring binder or some other readily accessible format. It might include ample blank space on each page for teachers to record their reactions to each part as they use it, along with any suggestions they have for improving it.

Clear thinking becomes clear writing; one can't exist without the other.
—William Zinsser

Establishing the Implementation Plan

While school boards and school districts often demonstrate considerable interest in curriculum development, teachers can become cynical when their enthusiasm for and hard work on a new curriculum is never implemented. And rightly so: a huge investment in time and money is wasted if a new curriculum never finds its way into the classroom. There is a tendency to see new curriculum as a concrete document we can carry or hold onto. Yet booklets alone do not result in change or improvement. Only people can change curriculum, and it requires a consistent and intentional implementation plan for this to happen.

The *Exploring Life's Work* curriculum will require an extensive implementation plan. Several things are required to successfully accomplish this.

- Adequate inservice must be provided to the teachers expected to use the curriculum.
- The district must provide funding for the materials and resources necessary to transmit the curriculum to the students.
- Someone must monitor use of the new curriculum and act as a support person or change facilitator.
- Some teachers will need to courses to prepare them to use cooperative group learning and concept learning.

Reformers have the idea that change can be achieved by brute sanity.
—George Bernard Shaw

Inservice

A primary purpose of inservice is to increase and update the repertoire of teaching strategies available to the teacher. In this case, cooperative group learning and concept learning will need to be major foci of inservice for the life's work curriculum.

Research in effective inservice suggests that the following approaches considerably impact 90% of teachers:

- demonstration of new approaches to curriculum
- discussion of theory and practice followed by structured feedback

However, before some teachers can consistently implement the new strategies, they will need mentoring on how to apply new skills in the classroom. (Joyce and Showers, 1980.)

Teacher Concerns about Change

Do not confine your children to your own learning, for they were born in another time.
—Hebrew proverb

Teachers engaged in curriculum change will have specific concerns about the change and their involvement in it. Their first concerns are likely to be personal and individual rather than others- or goal-oriented. To manage change effectively, curriculum planners must understand that movement outward from personal concerns cannot be forced upon teachers. However, with support and assistance, it can be aided.
(Hall, 1979.)

- How will this affect me personally?
- How is the new curriculum similar to and different from what I already am doing?
- When will the new program begin?
- What will the inservice involve?
- Why is the change being made?
- Where did the new approach come from?
- How is the new approach supposed to work?

As they prepare to use the new curriculum or begin using it, teachers' questions will focus on how to manage it.

- How do we find the time to do this?
- How can we arrange to have different students doing different things at the same time?
- How can we stay ahead of our students?
- How can we organize the necessary activities and materials?
- How can we determine the changed curriculum's effects on the students?
- How can we improve the program's effectiveness?

The curriculum team needs to anticipate and understand, these important teacher concerns and address them through inservice so the curricular change can be efficiently and effectively made. The more comprehensive the change, the more carefully those responsible for implementing it will need to attend to teachers' concerns. Individuals who are "stuck" on the first question—"How will this affect me personally?"—will have little or no receptivity to assistance directed toward management concerns.

At the earliest stages of implementing the life's work curriculum, it is essential that teachers be made aware of the general focus and purposes of the new approach and the timelines involved. Successful inservice does not overwhelm teachers with too much information. It helps them visualize how the curriculum is possible, not impossible, to implement.

Effective Inservice: Patience and a Positive Attitude are Key

Those who are responsible for providing necessary inservice (and otherwise facilitating the change) should not dwell on how effective other curriculum projects based on *Exploring Life's Work* have been in other locations. Although there is always something to be learned by others' successes and failures, it is crucial not to imply that teachers who do not fully and successfully use this guide will be viewed as a failure. Patience is the key in the process of incremental implementation of a new program. Moving from what is known and demonstrated as successful to what is unknown and new is more likely to achieve the desired results than trying to import something wholesale, without making any mistakes or experiencing any setbacks.

Helping teachers develop positive attitudes toward the change is one of the goals of effective inservice. Based on their examination of research on adult learning, Fred Wood and Steven Thompson (1980) suggest the following guidelines for effective staff development:

- Effective inservice gives teachers control over the "what" and the "how" of learning. If teachers are actively involved in curriculum planning, they come to the training sessions having such control.
- Effective inservice focuses on job-related tasks that the *participants*, not the planners, consider real and important. This focus should again result from active teacher participation in curriculum development and attention to the stages of concern identified in previous paragraphs.
- Effective inservice provides choices and alternatives that accommodate differences among participants and recognize their different areas of expertise and experience. Not all teachers will require the same amount and kind of inservice training. Needless to say, it would be pointless to force a teacher to attend inservice training on a topic in which she or he already possesses considerable expertise.
- Effective inservice offers participants opportunities to practice what they are to learn in simulated and real work settings.
- Effective inservice uses the strategies it aims to teach. An inservice on *Exploring Life's Work* should employ cooperative group learning, concept learning, be exploratory, and, above all, respond to the special needs of young adolescent learners.
- Finally effective inservice reduces participants' fear of judgments by their superiors and the sense of threat this can engender by allowing peer participants to give each other feedback concerning performance and areas of needed improvement.

These three guidelines can help the curriculum team develop effective inservice:

1. Changes in teachers' attitudes and beliefs that new curriculum may require is more likely to follow than precede changes in practice and improvement in student performance. (Gusky, 1985.)
2. Setting up a pilot program in a school that has a favorable attitude toward change can create enthusiasm in the district's other schools and make the designing of effective inservice that much easier.
3. Teachers are the most receptive when inservice is provided by other teachers who are teaching at their level and successfully applying the methods advocated in the inservice.

[P]lanning committees should be guided by the principle of "smallness-within-bigness. . . ." Committees should give priority to efforts which will, first, establish smaller units within the school and, second, build toward effective functioning of these units.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Materials and Equipment

Curriculum writers should be aware of budgetary constraints before beginning their job so that they can consider such limitations during their work. As indicated earlier in this chapter, early involvement of school board and community can help build broad-based support for the new curriculum. This support will be necessary when budgets are being written to cover equipment, software, texts, other materials, and staff development opportunities.

Change Management Considerations

Successful change management in general requires that a clearly identified, well-skilled person be in charge of facilitating change. That person must be prepared to act decisively. Where curriculum revision is concerned, these "change agents" can include a number of different individuals. A new curriculum that originates with a small group of teachers has the potential asset of a committed core of teachers who may be able to persuade an entire faculty of the benefits of the change.

Principals and/or curriculum directors possess another kind of advantage: under their direct leadership, change can occur quickly. Research shows that the most significant change, from an educational effectiveness point of view, occurs at the building, rather than at the district, level. (Stevens, 1985.) The principal is perhaps the most important agent of curriculum change. The curriculum planning team should bear this in mind. The implication of this is that, before principals can be expected to have the enthusiasm necessary to make a new curriculum work in their buildings, they must understand and support it.

Once a curriculum is adopted, teachers are professionally obliged to use it. In small schools, the principal is responsible to ensure that teachers follow the new curriculum. In large schools responsibility may be delegated to department chairs or unit leaders. Teachers will expect to have their suggestions considered and implemented when there is consensus. Those who sincerely attempt to use the new curriculum, especially those who use it without embracing it wholeheartedly, will expect the principal to demand cooperation of those who do not. Consistent expectations that all professional staff share responsibility for implementation will strengthen the sense of teacher ownership and teachers' willingness to use the new program.

We suggest a school-wide focus on aligning curriculum with the real academic needs of students and on improving the quality of instruction. This effort will probably be spearheaded by the principal and team leaders.
—Massachusetts Advocacy Center and the Center for Early Adolescence

Not every teacher in the district will be as committed to the new curriculum as are those who write and develop it. Some will resist even the slightest change. Others will resist changes that they fear or do not understand. Effective leadership is essential to the change process.

Coursework to Enhance Professional Development

A number of colleges and universities now routinely offer coursework on methods and approaches that are instrumental to *Exploring Life's Work* such as cooperative group learning and concept learning. Although most middle-level teachers will have been exposed to these strategies, they are complex approaches that require an adequate philosophical base and an opportunity for guided practice. Teachers who have had little previous involvement with young adolescents may also need coursework addressing the nature and characteristics of the early adolescent. Since all of these issues lie well beyond what this guide can offer, its authors encourage ongoing professional development.

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Sample Learning Activities

Socialization: Traditions and Learning
Management in Life's Work and the Community
Interdependence and Technology
Motivation: The Way of Enterprising People
Cooperation Makes the World Go 'Round
Communication: Action + Reaction = Interaction

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The activities in this section were carefully chosen as samples of learning experiences that can help students form or further develop the concepts and subconcepts that are the focus of *Exploring Life's Work*.

- The activities attempt to stimulate student curiosity by using an introductory exercise and inductive approaches to learning.
- They include opportunities for young adolescents to gather information using all of their senses.
- They encourage students to think creatively, conceptually, and critically.
- They represent a variety of contexts or settings in which the students can explore the concepts subsumed by life's work.
- They lead young adolescents to develop a richer, broader sense of what life's work means and what it means to be a worker.
- They address the needs of the whole child: physical, social, emotional, and intellectual.

Teachers who plan to use these activites should note:

These activities are not all-inclusive. If used alone, they will not permit a complete view of the concept of life's work. Teachers should use them as a point of departure for developing others.

These activities are not self-contained. They are designed as a means to help young adolescents arrive at a clearer understanding of life's work, but are not an end in themselves. That is, the activity for the concept of cooperation will not, in itself, impart a complete sense of that concept nor of the themes that concept subsumes. It will help students begin to expand their concept of cooperation by considering the themes of work roles in the family and society. There are many other possible themes as well, and part of the lesson of concept learning is that learning, like life, is an exploratory, ongoing process that is always evolving.

These activities will not be useful unless the teacher links them to the broader concept of life's work. The *Exploring Life's Work* approach will be help students develop a fuller appreciation of and preparation for work if they are aware, at each step of the learning process, of how what they are exploring or doing resembles work (shares its characteristics) or is different from work (shares its noncharacteristics). Thus, this curriculum is primarily and essentially practical in focus. All of education—and all educators—must prepare children for their work.

Each activity includes a list of supplemental resources which contain additional opportunities for engaging students and promoting their understanding of the concept(s) and theme(s) in each activity.

Important: Teachers who use these activities should work through them for themselves before attempting to use them in class. It is crucial that teachers analyze the concepts prior to engaging in each exercise with students. Learning experiences of this type should allow students to draw strongly as possible on sensory information.

Socialization: Traditions and Learning

Key Concept Explored

life's work

Subconcept Explored

socialization

Sample Student Concerns and Questions

- I wonder why my family is the way it is.
- Can somebody do a kind of work that nobody else in their family does?
- Why does society value some careers more than others?
- Why are there such negative stereotypes about the kind of work I want to do?
- I wish I could be sure I'll be prepared for my future; I hear that schools are getting worse all the time, and it worries me.

Themes That Might Inspire This Activity

- Traditions in schooling
- Family traditions
- Cultural traditions

Content Areas

This activity has the potential for content from the content areas listed below. The instructor can adapt the activity to cover additional content areas as well.

- Technology education (depending on the occupations chosen in Part II)
- Drama/theatre
- Home economics/family and consumer education
- Business education
- English/language arts
- Social studies

Objectives

The student will

- analyze the concept of socialization by thinking about traditions in schooling, families, and society.
- examine how traditions are created and/or maintained.
- reflect on the positive and negative consequences of having traditions.
- explore how traditions are related to culture.
- explore how various cultures value work.
- form conclusions about how traditions affect the socialization process and choices of work in different cultures.
- imagine the impact of establishing new or maintaining old traditions in the workplace.

Suggested Resources

Farnette, Cherrie, et al. *People Need Each Other.* Nashville, TN: Incentive Publications, Inc., 1979.

Stanford, Gene. *Developing Effective Classroom Groups.* New York: A & W Visual Library, 1983.

The following list of publications are just four in a series covering the major cultural and ethnic groups of Wisconsin settlers. Teachers can use other titles as well or can refer to materials of local interest.

Cooper, Zachary. *Black Settlers in Rural Wisconsin.* Madison: State Historical Society of Wisconsin, 1977.

Davies, Phillips G. *Welsh in Wisconsin.* Madison: State Historical Society of Wisconsin, 1982.

Fapso, Richard J. *Norwegians in Wisconsin.* Madison: State Historical Society of Wisconsin, 1977.

Hale, Frederick. *Danes in Wisconsin.* Madison: State Historical Society of Wisconsin, 1981.

Introductory Exercise

This alliterative-adjective exercise will help introduce students to one mechanism by which people are socialized into the traditions of their culture: information passed from one generation to the next through repetition and a gradual addition of facts. In this introduction, each student will act as one generation, and the message to be passed along—to socialize the subsequent generation—is the name of each previous student and an adjective describing him or her.

Step One: Setup and Exercise. Seat all students in a circle. Ask one student to begin by stating his or her first name preceded by an adjective that describes him or her and that begins with the first letter in their first name (such as "magnificent Miguel").

Then ask the next student in the circle to repeat what the first student said and then do the same for his or her name (for instance, "magnificent Miguel, amazing Ayesha"). The process continues with each subsequent student, continuing until all of them have added their names. The last student will have to name all previous students.

If a student has trouble remembering a particular student's adjective, encourage him or her to ask for help. Take note of the strategies others use to assist the student—do they simply repeat it, or do they make reference to a trait or a shared experience that reminds them all of why the adjective was used?—to mention later in this activity.

Step Two: Discussion. Discuss the exercise with the students. Ask them questions such as

- How did they remember the adjective for each person? Was that different for students at the beginning of the circle than it was for those at the end?
- How did they help each other out when someone forgot something?

- What happened as they got closer to the end of the circle and more names were added?

Step Three: Transition to the Activity. Ask each student to consider himself or herself a "generation," and ask how he or she managed to pass along a complex message that grew from generation to generation.

Introduce the notion of "tradition." One possible definition is a message or a body of information that is handed down from people in the past to people in the present.

Part I: Learning about Traditions

1. Direct students to search for information about traditions in schools of the past. This will require them to select a period of interest and sources that will serve as oral and/or written historical archives. These might include

- retired teachers or administrators
- grandparents or other elders
- short stories or excerpts of novels
- old local newspapers
- archived student publications such as yearbooks, newspapers, and flyers.

Coach them, if necessary, in the basics of interviewing, historical research, and notetaking, and inform them of the amount of time they will be allowed for their information search.

This task works especially well with cooperative learning groups because students can help each other think of questions to ask or search strategies to try. It also reinforces the notion that there are no right or wrong answers, and that effort and cooperation will produce the best results.

2. After they have completed their searches, lead a discussion of their findings. Use the discussion to help students form conclusions about the meaning of traditions and about how forming and maintaining traditions is part of life's work (as socialization).

Questions for discussion might include these:

- What are some of the traditions that schools had in the past that we still practice? What traditions no longer exist?
- Why did some traditions survive and others didn't?
- What new traditions exist that past schools didn't have?
- Why did the new traditions come into being?
- Which of the new practices do the students think will survive into the future, and which won't?
- How will the new traditions be passed on?
- What other traditions could be initiated? What purpose(s) would they serve and how would they be passed on.

3. Optional: Involve students in developing a plan for implementing and transmitting to the future a new tradition in their school.

Part II: Historical and Contemporary Traditions of Work

1. Assign students to cooperative learning groups. (Section 3 of *Exploring Life's Work* discusses cooperative group learning.) Assign to each group one of the Wisconsin State Historical Society resources listed on page 106 or any other available ones that will permit the group's members to complete this step.

Each group is responsible for assembling data and filling in the data chart on Student Handout 1: Traditions of Work in History. Questions are provided on the sheet to help students analyze the data. These are merely suggestions, and the teacher should feel free to adapt the list as needed.

2. Assign students to new cooperative learning groups. Provide them with access to contemporary sources of data on occupational areas. Each group should investigate one contemporary occupational area. These can include both mediated sources (newspapers, videotapes, etc.) and direct sources (such as mini-interviews of representatives in the selected occupations). Some students may show interest in learning about occupations that have survived since the time of the settlers.

Optional: Instead of making the direct sources part of the initial data gathering, students can conduct the interviews with representatives of occupational areas *after* collecting the mediated information. This way the representatives can confirm or refute the perceptions students gain from the mediated information.

3. Compile data from both cooperative group learning exercises on a master chart in the classroom to prepare students for Step 4. Help students analyze the concept of socialization, using characteristics of socialization they've learned about in their cooperative learning groups.

4. Involve the students in writing and enacting role plays that depict the characteristics of a "good worker" in a typical work situation. The role plays

- should be specific in portraying the characteristics of the settlers' and contemporary individuals' occupations the students researched.
- should suggest how different cultures pass traditions of work along to subsequent generations.
- should *not* be limited to paid work, but should consider unpaid work as well.
- may consider issues such as how established traditions can conflict with others' values, how technology can change traditions, and how some occupations change more or less than others over time.

5. As a closing exercise, discuss with students values of work and how its meaning may change over historical time, in different settings, or even from day to day in a person's life. These are possible discussion questions:

- What is meant by the value of work?
- How do people reflect their value of work through their actions?
- What are some reasons that different people have different ideas about the value of work?
- From where does a person get his or her value of work?
- What would happen if everyone in a work situation had the same traditions and values of work? What would happen if they all had different ones? Would people work "better" or "worse" in either case?
- What characteristics does school work share with other kinds of work studied in this activity (that is, historical and contemporary examples)?
- How do adults socialize their youngsters about traditions of work and work values? What responsibilities do young people have for that socialization?

Traditions of Work in History

Group members' names:

-
-
-
-
-
-

Historical Information

Country of origin for the settlers you are studying: ____________________

What personal qualities did this culture value? List as many as you can.

-
-
-
-
-

Summary Questions

Discuss the questions below with the rest of your group. Then write a three-sentence paragraph for each set of questions. When you're finished, you'll have a three-paragraph essay on the values of work and work traditions for the settlers you researched.

1. Wisconsin's first settlers did many different types of work. Where did the settlers you studied come from? What kinds of work did they do in their original country?

2. How was their work in the United States different from their work in their country of origin? How was it similar?

3. What way of life did people attribute to these settlers? Was it accurate?

Student Handout 2

Contemporary Traditions of Work

Group members' names:

-
-
-
-
-
-

Historical Information

Occupations your group is investigating:

-
-
-

What personal qualities does a worker in this area need to have? List as many as you can.

-
-
-
-
-

Summary Questions

Discuss the questions below with the rest of your group. Then write your answers out in paragraphs of several sentences each.

1. Describe the occupational area(s) you studied. What kind of work does a typical worker do? Give as many examples of that work as you can.

2. What traits or characteristics does a worker in this occupational area need? Give as many examples as you can.

3. What kind of person could do the work of this occupation? What kind of person couldn't? Could you do this work? Why or why not?

Management in Life's Work and the Community

Key Concept Explored

life's work

Subconcept Explored

management

Sample Student Concerns and Questions

- How do complicated tasks get done?
- I wish I knew how to use my time so I could accomplish as much as some of my friends.
- Why do some people get to tell other people what to do?
- I want to know how to ask people to do things so they want to; all I ever learned was how to order people around, and I don't like to be treated like that.
- How do you know what's expected of you in a new situation?
- I don't understand why the people who run things get paid more than the people who do the work.
- When I grow up I want to be a vice president in a big corporation so I can tell other people what to do and get paid a lot of money.

Themes that Might Inspire this Activity

- Work roles
- Social organization
- Family organization

Content Areas

This activity has the potential for drawing on content from the areas listed below. The instructor can adapt the activity to cover additional ones as well.

- English/language arts
- Social studies
- Reading
- Technology education (depending on choices in parts II and III)
- Environmental education, agriculture/agribusiness
- Business education
- Home economics/family and consumer education
- Marketing education

Objectives

The student will

- analyze the concept of management through visualization, interviewing, and exploration.
- explore examples and nonexamples of management.
- apply the concept of management to their work as students.
- become involved in the process of managing projects.

- reflect on the relationship between management and workplace success.
- explore the different meanings of management in different contexts.
- learn the skill of visualization and how to apply it to problem-solving.
- experience how all workers are involved in management, not just those who are managers by profession.

Suggested Resources

Lipson, Greta Barclay, and Jane A. Romatowski. *Calliope*. Carthage, IL: Good Apple, Inc., 1981.

Wayman, Joe. *The Other Side of Reading*. Carthage, IL: Good Apple, Inc., 1980.

Introductory Exercise

In this introductory exercise, the students will learn the skill of visualization or image building. This skill will help them analyze the concept of management (and others as well) by strengthening their ability to form mental pictures.

An image-building exercise entitled "The Mind's Eye" appears in *The Other Side of Reading* (page 119), cited above. Any other similar visualization activity could be substituted.

Ask the students to sit comfortably in their chairs and explain the introductory exercise to them. They should have a pen and paper at hand. Some people find it easier to focus on image building in a darkened room; turning off some of the classroom lights may help students focus on this exercise.

Read the following passage aloud, pausing between sentences to give students time to construct the image.

"Close your eyes and relax. Take a deep breath, as deeply as you can. Hold it a moment. Then let it go. Take another breath, as deeply as you can. Hold it. Let it go. Now try to see in your mind what I'm going to describe. We're going to build a picture in our minds, one step at a time.

"See a circle. It is about the size of a dinner plate, about nine inches across. It is dark blue. In the center of the dinner plate is an orange, five-pointed star. Sitting on the top edge of the dinner plate is a yellow flower. The flower has five petals. It also has a green stem with three heart-shaped leaves.

"Look at the left of the dinner plate, where the 9 would be on a clock face. There will you see a sleek dolphin, floating just above the plate. The dolphin is a very small one. It is only about three inches long. It is a silvery blue.

"On the right of the dinner plate, where the 3 would be on a clock face, is a bright red beetle. It is wearing black and white basketball sneakers on all six of its feet.

"Can you see all of this in your mind? The dark blue circle with the star. The yellow flower with its green stem. The tiny blue dolphin. And the beetle with its sneakers.

"Now put the star where the beetle is. Put the flower where the dolphin is. Change the red beetle to another kind of insect and let it crawl to another part of the circle. Can you see your new picture in your mind?

"Now open your eyes and draw the picture you see."

Allow students a few minutes to draw their visualizations. Then, lead a discussion in which they discuss their thoughts and feelings about the exercise. Did they find it an easy exercise? A difficult one? How many students found it hard to draw the picture? Since the aim is to help them strengthen their image building capacity, this exercise can be used in many different contexts.

Part I: Exploring the Notion of Management

1. Introduce the word "management" to the students. Ask them what comes to mind when they think of the word (definitions, examples, scenarios, etc.). Appoint one or more students to record the ideas suggested.

Ask students whether the introductory exercise (image-building) was an example of management. Provide them with access to a variety of thesauruses so they can search for synonyms for "management," and record these.

2. Assign students to cooperative learning groups. Assign each student in each group one synonym for management (such as control, oversight, regulation, or planning). Then, each student should create a scenario in which his or her word is shown being acted out by someone performing that type of management in their work. These scenarios can be essays, narratives, fairy tales, plays, or any other appropriate form.

3. Members of each group should share each others' scenarios and draw some conclusions about the elements all scenarios have in common. Individual groups can then share these conclusions with the entire class, discussing on a group-to-group basis the features of their notion of management. Help students explore the idea as deeply as possible,

Part II: Comparing Ideas to Real Life

1. Invite an individual to speak to the class whose job description includes management tasks. Ask that person to share with the students what he or she does as a manager.

Optional: Invite a number of speakers from various occupations, avocations, and situations whose management work may be quite different. For instance, a homemaker who manages a home; a factory leadworker who manages an assembly process; a personnel officer who manages human resources. This will allow the students to see the diverse ways in which management takes place in various settings.

Optional: Provide an opportunity for students to manage the publication of a class newspaper or newsletter. Reporters could interview individuals involved in various types of management work. Students may need help in considering a variety of contexts and subjects. In this option, they directly experience a process that requires management and also explore others' points of view on the concept.

2. Help students compare and contrast their conclusions about management to what the guest speaker describes as management. Sample questions might include

- How are the students' concept and the adult's concept similar? How are they different?
- Who is responsible for management? Who is not?
- In what situations does management occur?

3. Have students consider how their notion of management has changed, given the input of the speaker(s). Then, ask them to consider whether they are involved with management on a personal level.

- Who do they know, besides the guest speaker(s), who manages something?
- What do they manage?

4. Help students "bring the idea home" by having them visualize a typical day at school. Coach them verbally as they get comfortable, relax, close their eyes, and begin visualizing the activities they might typically engage in. They may find it easier if the teacher "talks them through" the image building, with statements such as "You are walking through the front door just before the first bell. There are many students in the hall. You go to your locker. . ."

5. Follow up on the visualization activity in step 4 by having them make a list of ways in which they manage their lives at school. (In this step, they are generating characteristics and noncharacteristics of the concept.)

- What do they manage?
- Do they manage things all the time or just sometimes?
- What skills do they need to manage?
- What are the rewards for good management in their own lives? What are the dangers of poor management?

This listing activity can be done individually or in small groups. Everyone (or all the groups) should share their lists.

6. Facilitate a discussion in which students form some conclusions about the characteristics of management.

7. Help students think about noncharacteristics and nonexamples of management. A lead-in to this exercise could be a video of a traffic jam or of the chaos in the halls after school. The class could role-play a chaotic situation. Or they might discuss (or experience!) a "bungled" group project.

- How are poorly managed situations different from well-managed ones?
- What happens when there is no management?
- When a situation isn't being managed, can anyone step in and provide organization and order? Or is this function reserved only for some folks?
- What are some of the different ways that people can manage situations?

8. Now that students have identified characteristics and noncharacteristics, they should be able so provide examples and nonexamples of management. Encourage them to complete sentences such as:

- I'm a good manager in the tasks I do each day because. . .
- If each individual is practicing personal management then. . .
- Management makes success possible in different tasks because. . .

Part III: Creating a Community

1. Provide students with a map of their community. Ask them what they think of when they look at it. Then lead them in a brainstorming session in which they consider questions that tie the concept of management to that of community such as

- What are some examples of ways our community is managed?
- What needs to be managed? What can run by itself?
- How is the management accomplished?
- Who is responsible for managing these different things?
- What happens to communities that aren't managed?

2. Assign students to heterogenous cooperative learning groups. Tell them that they are going to create a fictitious case study about a family that includes as much specific information as possible. Ideas follow.

- the names of all members
- their ages, interests, and hobbies
- the work that each member does
- the type of housing they occupy; the kind of neighborhood they live in
- their challenges, special needs, and problems

Providing a list of topics to include in the case studies will encourage consistency from group to group. Students may not be familiar with case studies and may need a model. Encourage the small groups to be as specific as possible, so that their case studies will be as lifelike as possible, and to use visualization as they try to "flesh out" their fictitious families.

Optional: To ensure students visualize a variety of families, provide groups with basic socioeconomic and demographic information that they can build on.

3. Explain to the class that they will now create a community for the families they summarized in the case studies. Encourage them to think of all aspects of community life, including

- What is the name of the community?
- Where do people work, live, play, and go to school?
- How is land used? Which portions of the community are reserved for public use? For private use? For special uses?
- Where are the factories, shopping malls, parks, farms, etc., located?
- How is the government of the community structured?
- What are its prominent media? Its tourist features? Its economic mainstays?

They should "create" the community in whatever media they wish—posterboard, models, video, or other—in which the case study families will reside. This may be done in small groups or as a class.

This is an excellent activity for encouraging independent, real-world exploration because young adolescents may not be aware of or fully understand some of the features of communities that adults consider important (why it makes a difference that a community is rural or urban in nature, that it depends on services, manufacturing, or agriculture, and so forth). Encourage them to seek out these answers and to generate as many questions as possible. Also, encourage them to use visualization as they develop their community's features.

Note: This portion of the activity provides students the opportunity to manage a complex process as well as to consider management as a concept. Groups may find it helpful to appoint a recorder, a facilitator, or other roles to help manage the creation of the community.

Optional: If they are capable of organizing themselves, allow students to determine all facets of the community-building project, from the media they use to depict it to how to accomplish the task (individually? small groups? task teams? as a class?).

Optional: Have students develop a publicity or Chamber-of-Commerce-style pamphlet that describes the community for visitors or new residents and describes the quality of life enjoyed by its residents.

4. Students can summarize their new understanding of the concept of management in a journal writing exercise or by some other appropriate means.

Interdependence and Technology

Key Concept Explored

life's work

Subconcept Explored

interdependence

Sample Student Concerns and Questions

- How do complicated tasks get done?
- Everybody is using computers. I don't know if I can keep up with changes in technology, and it scares me.
- Computers are the greatest! I'd rather spend time with them than with people.
- Computers are the worst! They're always breaking down and making mistakes, and I don't want to use them at all.
- Technology is OK, I guess, unless it takes over.
- There won't be any production jobs when I grow up; my family has always worked in factories, and everywhere factories are closing.
- I don't see how what I do will make a difference in the world.
- Why can't countries and governments work together for a change?
- I don't see why we have to worry about what people are doing on the other side of the world. What's going on here is more important.
- Doesn't anybody care about all the people who are unemployed, homeless, sick, or lonely?
- Why is my community the way it is? How can I change it?

Themes that Might Inspire this Activity

- Community/social organization
- Technology
- Systems
- Production

Content Areas

This activity has the potential for drawing on content from the content areas listed below. The instructor can adapt the activity to cover additional content areas as well.

- Technology education
- Social studies
- Business education
- Marketing education

Objectives

The student will

- analyze the concept of interdependence through an examination of work and technology.
- experience interdependence.

- determine how communities depend on interdependence.
- form conclusions about technology's impact on interdependence.

Suggested Resources

Farnette, Cherrie, et. al. *People Need Each Other*. Nashville, TN: Incentive Publications, Inc., 1979.

Stanish, Bob. *Hippogriff Feathers*. Hamilton, IL: Hamilton Press, Inc., 1981.

Sasse, Connie R. *Person to Person*. Peoria, IL: Chas. A. Bennett Co., Inc., 1978.

Introductory Exercise

Step One. Arrange for students to participate in a game of pick-up sticks. Allow five to ten minutes for them to experience the game. Then encourage a discussion of the exercise, questioning them so they develop the idea that the challenge of the game lies in the way the sticks overlap; it's difficult to remove a stick from the pile without moving others.

- What did students notice about the game? Why is pick-up sticks harder to play than might be expected of such a simple game?
- How did they feel during the game?
- If the sticks were people, what could they say about the situation?
- How is life in a community like the game of pick-up sticks? (See the resources listed above for publications that discuss teaching with synectics and analogies.)

Step Two. Provide students with additional examples of games or objects that can be seen to demonstrate interdependence, such as a teeter-totter (both riders must work together to keep shifting the balance between them), jigsaw puzzles (the completion of the picture requires all pieces to be in place), chains (which get their strength by the interdependence of each link), and braids (whose pattern comes from the interwoven strands). Ask students what the examples have in common, and lead them to discuss the notion of interdependence.

Optional: Provide the students with envelopes that contain five to seven sentences, which form a paragraph, on separate strips of paper. Ask them to assemble the sentences into a logical paragraph. Ask them to consider how each sentence contributes to the whole and what this reveals about interdependence.

- What happens if one of the sentences is missing?
- What would happen if sentences from several envelopes were mixed together?

Part I: In a Community, Everyone is Essential

1. Ask students: What are some examples of interdependence they see every day? Examples might include families, school, the community itself, work roles, businesses, hobby organizations, and play groups. Discuss what these examples have in common. They should understand that human beings perform the work of establishing and maintaining interdependence, and that this work—although unpaid—is very important.

2. Assign students to cooperative learning groups with the task of developing a list of workers in the community and the tasks they perform. Remind them that work does not always involve earning a salary; they also should consider examples of volunteer work, work in the home, and so forth. Gathering information for this list can involve exploration in the resource center, interviews, brainstorming, or any other learning strategies.

Provide each group with 1-1/2" by 8" strips of paper. Once they have made their list, they should write the title (or name) of each worker and the task he or she does on each strip of paper.

Assemble all groups, and ask them to form a paper chain with the strips of paper.

Optional: Invite students to represent interdependence visually with materials such as string, construction paper, buttons, and pipe cleaners. Ask them to be explicit about how their representation expresses the work of interdependence. (See Step 3.)

3. Facilitate a discussion of how the chain (or students' other representations of interdependence) is like a community.
- What is a community like whose members depend on one another?
- What is a community like whose members cannot depend on one another? Can that still be called a community?
- What kind of work is involved in creating and maintaining interdependence? (That is, how did students create and maintain interdependence in this activity?)

4. Instruct one student to destroy one of the links in the paper chain.
- What impact does this have on the chain/community?
- What real-life conditions might break the chain of interdependence in a community?
- What can people in a community do when interdependence is threatened?

5. Help students form conclusions about the meaning of interdependence and the role it serves in the work of a community.

Part II: Technology Can Help Create Interdependence

1. Provide students with the opportunity to use a printer and a computer to create a banner that displays a message about interdependence. This can be done individually, in cooperative groups, or as a class. In any case, ask students to be aware of the process through which they accomplished the task and how they worked to create interdependence.

2. Ask students to think about technology and to list examples of it. Brainstorming can occur in the classroom, or students might take tours of local businesses whose workers or customers have been affected by changes in technology. Encourage students to think about how examples of technology are related to the concept of interdependence.
- How are specific technologies themselves examples of interdependence (computers and printers; telephones and answering machines; supermarket scanner and cash register; etc.)?
- How do these technologies help or hinder humans in the work of creating interdependence?
- Do all systems require interdependence?

3. Involve students in a mass production simulation. (*Person to Person*, listed in the resources, above, provides an example of a "gadget factory.") Follow this up by discussing the idea of mass production as interdependence:
- How does mass production work?
- What technology is used?
- What are some examples of objects that are mass produced?
- Are there some objects that cannot be mass produced? What are they?

- What does interdependence mean for the work of mass production? Is it different than interdependence in other settings? How?
- What can interrupt this interdependence?

4. Have each student or each cooperative learning group choose an item that is mass produced, trace its origins (raw materials, plans, etc.), investigate its production, and explore where and how it is marketed.

Optional: Do this step in concert with local businesses so students can

- interview individuals involved in production or management of the products in question;
- witness the production and packaging; and
- research how the marketing of products occurs.

5. Invite students to write about how technological interdependence affects a society and gives a society its character. Students might approach this as a topic in

- social studies or technology education. (How does technological interdependence affect different societies at different times in history? How was ancient Egypt's technological interdependence different than that of today?)
- business education. (How does today's technological interdependence affect the way business is done?)
- family and consumer education. (Does technology affect the interdependence of the family? The home? How?)

Motivation: The Way of Enterprising People

Key Concept Explored

life's work

Subconcept Explored

motivation

Sample Student Concerns and Questions

- How am I supposed to know what I want to be when I grow up?
- Some people always know what to do; I wish I were more like that.
- How do you make dreams come true?
- Does it really make a difference, the things I'd like to see happen?
- I'd like to learn more about making choices in my life. There are so many big choices, and I don't know if I'm prepared for them!
- How is it that some people accomplish so much but others can't even get started?
- The only way to succeed in life is to be really lucky or very rich, and I'm not either. I guess that settles my future.
- I'm BORED!!!

Themes that Might Inspire this Activity

- Choices/options
- Enterprise
- Initiative
- Resourcefulness
- Creativity
- Interests/aptitudes

Content Areas

This activity has the potential for drawing on content from the areas listed below. The instructor can adapt the activity to cover additional content areas as well.

- Business education
- Marketing education
- Social studies
- English/language arts
- Other areas, depending on the "creative people" chosen for exploration in Part I

Objectives

The student will

- analyze the concept of motivation by using biographical sketches of creative people and by exploring the theme of enterprise.
- explore conditions that succeed in motivating people.
- reflect on personal motivation.

- consider the relationship between individual motivation and enterprise
- examine the impact of being "enterprising"

Suggested Resources

Gudeman, Janice. *Creative Encounters with Creative People.* Carthage, IL: Good Apple, Inc., 1984.

Hutt, Roger W. *Creating a New Enterprise.* Cincinnati, OH: South-Western Publishing Co., 1982.

Lipson, Greta B., and Jane A. Romatowski. *Calliope.* Carthage, IL: Good Apple, Inc., 1981.

Introductory Exercise

Prior to class, assemble a variety of mini-activities that each should take no more than ten minutes to complete. Possibilities might include a simple origami project, a page from a "creative" coloring book, mind bender puzzles, and an audiotaped short story. Try to provide a variety of items that exercise all five senses. Select enough activities so all students have a few choices and place them in an "activity area" in the classroom

Then, tell students that they will be given ten minutes of class time to do whatever they choose from the activity area. They may choose one activity.

After the activity period, ask students to share what activity they chose to do and why. Lead the group in a discussion of how various students' motivation was similar or different, and explore possible reasons for the variety of choices made by members of the class.

Part I: Creative People are Motivated People

1. Ask students to brainstorm on possible meanings for the concept of motivation and questions that will help generate characteristics and examples, such as:

- Where can examples of motivation be seen?
- What does it mean to be a motivated person?
- How do people become motivated? What happens to people who lack motivation?
- Are some people more motivated than others? Why?
- Is motivation important? Can it be learned?

2. Assign each student a biographical sketch of a creative person. One possible resource for sketches is *Creative Encounters with Creative People*, listed above in the resources. Discuss with students the notion of "creativity."

3. In this portion of the activity, students will practice imagining and visualizing skills by "becoming" the creative person in their sketch. This will require them to gather information on the individual and his or her historical period and cultural background.

For instance, the student assigned a sketch of Martin Luther King will need to know something about Dr. King's life and beliefs, the historical context of the civil rights movement, and so forth. The student "becoming" Helen Keller must understand the limitations a hearing- and visually impaired individual would face, as well as some of the details of Ms. Keller's experiences as a disabled woman seeking an advanced education in the first decade of the twentieth century, etc.

The goal in this step is to help the student experience motivation. Therefore, offer students whatever encouragement they need to improve their identification with the creative person—from doing library research to making period costumes.

Optional: Allow students to select an individual from a teacher-supplied list. Or allow them to select any individual they wish.

4. Once it is clear that students have established a rapport with their creative alter egos, announce that they will be organizing an awards ceremony in which each creative person is to receive a special award for motivation. A master of ceremonies will present the award with a brief overview of the individual's accomplishments. Each recipient will prepare a thank-you speech. Encourage students to come to the awards ceremony in costume; the awards can be displayed in the classroom, if desired.

The overview of individual accomplishments and the thank-you speech should include information on the sources of each creative person's motivation. For instance, Martin Luther King was encouraged by his family and friends to fight for civil rights; the tenor of the nation's attitudes toward racial prejudice also motivated him to seek change. The goal here is to have students explore the diverse factors that contribute to a person's sense of motivation.

5. Facilitate a discussion in which students form conclusions about motivation, relating their observations back to the "creative person" activity. Have them follow up this discussion with a writing exercise in which they connect creativity to motivation and summarize what they've learned about the characteristics of motivation.

Part II: Motivated People Can Be Enterprising

1. Display the following items in class and ask students to brainstorm on the possible similarities between them.

- an instant camera
- a microcomputer
- flyers advertising Disney World
- a book
- a fly swatter
- a Thermos bottle

Make sure someone records the ideas raised in the brainstorming session.

2. Have students pose for instant photographs and then share the resulting pictures. While everyone views the photos, question them on what they think motivated the inventor of the instant camera.

- How does this way of taking pictures work?
- Have pictures always been taken this way?
- How were pictures taken in the past? How do other types of cameras work?
- When was the instant camera invented?
- Who invented it? What things may have motivated the inventor?
- What can we say about people who invent things like instant cameras? What qualities do they possess? (Ideas such as organization, creativity, responsibility, motivation, and the urge to solve problems should arise.)

Repeat these questions for the other items as well, and encourage students to consider again similarities between the items.

- Could there be any similarities between what motivated the inventor of the fly swatter and the inventor of the instant camera?
- What motivates innovation? What discourages it?
- Who is responsible for innovating things? When and where does innovation happen?
- How do these items impact everyone's lives? What would people do if these items didn't exist?

4. Help students form conclusions about what it means to be an enterprising person and how enterprises are created to solve problems. If possible, seek out individuals in the community who are involved in private enterprise, and invite them to share with the class their observations on motivation.

5. Encourage students to reflect on how they themselves are motivated.

- What motivates them to act?
- Does motivation ensure successful attainment of goals? Does it increase the chance of success?
- Review the questions in Part I, step 1.

Cooperation Makes the World Go 'Round

Key Concept Explored

life's work

Subconcept Explored

cooperation

Sample Student Concerns and Questions

- Why can't people get along with each other?
- I can't stand people who __________. Why can't they be more like—me?
- Is it true that competition won't be valued when I grow up?
- I wish I knew more about how to tolerate other people's differences.
- Sometimes I get impatient when I can't keep up with other kids; I wish they'd realize I'm trying as hard as I can.
- What scares me is people who will do anything to win.
- It's so much easier to get along with people from my neighborhood. Why should we have to deal with people who are so different?

Themes that Might Inspire this Activity

- Work roles
- Society
- Family
- Global understanding
- Creativity
- Leadership
- Organization

Content Areas

This activity has the potential for drawing on content from the areas listed below. The instructor can adapt the activity to cover additional content areas as well.

- Business education
- Marketing education
- English/language arts
- Social studies
- Art education
- Family and consumer education

Objectives

The student will

- analyze the concept of cooperation by participating in cooperative learning experiences.
- examine human interests, traits, skills, abilities, and begin to appreciate individual differences.
- experience opportunities to work cooperatively.

- reflect on the implications of practicing cooperative behaviors.
- establish how cooperation and responsibility are related in work environments.

Suggested Resources

DeBruin, Jerry. *Creative, Hands-On Science Experiences.* Carthage, IL: Good Apple, Inc., 1980.

Farnette, Cherrie. *People Need Each Other.* Nashville, TN: Incentive Publications, Inc., 1979.

Gordon, W.J.J. *Synectics.* New York: Harper and Row, 1961.

Kirby, Dan, and Carol Kuykendall. *Thinking Through Language.* Urbana, IL: National Council of Teachers of English, 1985.

Lipson, Greta Barclay, and Jane A. Romatowski. *Calliope.* Carthage, IL: Good Apple, Inc., 1981.

Pincus, Debbie. *Interactions.* Carthage, IL: Good Apple, Inc., 1988.

Stanish, Bob. *Hippogriff Feathers.* Hamilton, IL: Hamilton Press, Inc., 1981.

Wayman, Joe. *The Other Side of Reading.* Carthage, IL: Good Apple, Inc., 1977.

Introductory Exercise

Set up a "pop bottle band" before class and determine a song that will correspond to the "notes" for each bottle. When students come to class, assign each one a bottle. Tell students that they are to play their bottle when cued by the conductor. Inform them of how they will know when it's time to play their note. Other percussion instruments may also be added to the band.

Afterward, discuss with the students their observations on the activity.

- What was required for this activity to be successful?
- What happened when someone missed their cue? Did a missed note affect everyone? How?
- How did it feel to be involved in such an activity?
- What could improve the way the song sounded?

Part I: Cooperation Drives Successful Efforts

1. Provide opportunities for students to experience cooperation. The resources listed above offer some suggestions, such as

- building a house of cards
- jumping rope
- any group project where each student receives one item necessary for its completion and where the success of the whole depends on each person doing his or her part

2. Ask students to consider what it takes to be cooperative and to suggest some of the characteristics of cooperative people.

- What kinds of skills, talents, and abilities do cooperative people have? (Have students generate a list of these.)

- How do people acquire cooperative characteristics?
- What happens when people aren't cooperative?

Then ask the students to categorize and label the lists of skills, talents, and abilities. What do the labels suggest about the items in the list and about the people who bear those characteristics?

3. In this portion of the the activity, students will plan a cooperative skills fair. In the fair, each cooperative learning group staffs a booth that lets people test their aptitude or potential for a particular characteristic of cooperation. Possible booths are

- patience
- creativity
- listening
- questioning
- open-mindedness
- following directions
- manual dexterity
- problem solving
- organization
- leadership
- responsibility
- sensory skills (ability to use selected senses)
- sensitivity
- sharing

4. Encourage cooperation (and exploration of cooperation) in the planning of the fair. Each group will need to agree on how to test the characteristic they select, an activity that will challenge them to display that and other characteristics.

5. Afterwards, have groups share their observations of the fair and discuss human differences and the need for cooperative skills.

6. An opportunity to view workers engaged in cooperative activity would be useful. Organize one, if possible, and encourage students to explore the human traits or characteristics that these workers need to successfully accomplish their tasks. Relate these observations to experiences students had in the skills fair, and help them form conclusions about human traits, cooperation, and work.

Part II: Cooperation in the Family Workplace

1. In this part of the activity, students will consider the family as a workplace. This exercise is designed to shatter the notion that the only real work is paid work and that work only happens in formal, hierarchical organizations such as offices and factories. Students can visualize a family, view a video, or study their own family to answer questions about the nature of work in the family, such as:

- What work happens in the family?
- Who are the workers?
- When does a person become a worker in a family?
- What kinds of work do families do that is difficult to see?
- How is the family workplace different from other workplaces?

- What kinds of family work require cooperation?
- What happens when family members don't cooperate?

2. Encourage students to find examples of ways that families teach family members to cooperate. Examples might be mediated (cartoons, newspaper clippings, television programs) or gleaned from everyday experience. Help students use these examples to generate characteristics of cooperation and to develop conclusions about how families teach their members cooperative skills.

- How are these skills different from or similar to cooperative skills needed in other work settings?
- How do children learn cooperative skills? How do adults teach them? Can children teach adults about cooperation? How?

3. Once students have drawn conclusions about cooperation in the family, help them generalize this concept to a larger community. Arrange for them to listen to songs that reflect ideas about the world as a global community or the "family of humankind." They may enjoy writing a song with lyrics that reflect their conclusions about work, cooperation, families, and successful task completion.

4. Invite students to develop a personal parenting plan that includes an activity of their own design. The students should describe in detail

- how the activity would help strengthen cooperation in the family.
- how it would teach family members about their responsibility to each other.
- the features of the activity.
- the expected results of the activity.
- possible problems that family members might experience with the activity, and how to resolve them.

Communication: Action + Reaction = Interaction

Key Concept Explored

life's work

Subconcept Explored

communication

Sample Student Concerns and Questions

- Sometimes it's hard to tell whether people really mean what they're saying.
- I wish people wouldn't interpret things I say the wrong way.
- It makes me feel angry when people misunderstand me.
- There are times when it feels like it's easier just to shut up.
- Does anyone really care about what I have to say?
- I want to learn more about presenting myself so that people want to listen to me and trust me.
- My career is going to be in communications, and that means TV, newspapers, the recording industry, or other media.
- Why does everybody take my moods so seriously?
- How am I supposed to know what other people are thinking?

Themes that Might Inspire this Activity

- School
- Environment
- Social interactions
- Nonverbal messages
- Interaction
- Misunderstanding/understanding

Content Areas

This activity has the potential for drawing on content from all areas.

Objectives

The student will

- analyze the concept of communication by exploring nonverbal messages.
- explore how nonverbal messages can communicate important information and reflect on possible interpretations of these.
- reflect on possible interpretations of nonverbal messages.
- determine the relationship between nonverbal communication and life's work.

Suggested Resources

DeBruin, Jerry. *Young Scientists Explore the Five Senses.* Carthage, IL: Good Apple, Inc., 1983.

Farnette, Cherrie, et al. *People Need Each Other.* Nashville, TN: Incentive Publications, Inc., 1979.

Pincus, Debbie. *Interactions.* Carthage, IL: Good Apple, Inc., 1988.

Introductory Exercise

Set up—or have students set up—dominoes in such a way that a "chain reaction" will occur when one of them is toppled. Then allow students to topple them all. Set them up again and move one piece out of line. Allow students to topple them again. Discuss with students what they observed as a result of this exercise.

- What happens in a chain reaction? Lead students to consider the notions of actions and reactions.
- What causes it to be interrupted?
- What other kinds of chain reactions are there?

Any other appropriate example of a chain reaction will also serve to introduce this activity.

Part I: Facial Expressions as Nonverbal Communications

1. Help students explore what various facial expressions communicate. Introduce them to the notion of facial expressions as actions that communicate information nonverbally, including diverse emotions. (Note: It may be necessary to acquaint students with different emotions. The resources listed above offer suggested activities for exploring and naming the range of human emotions.)

2. Direct students in a role-playing exercise in which they display examples of facial expressions designed to communicate specific emotions or information. One way to do this is to create a deck of flash cards that depict and interpret facial expressions. As students watch the role plays, the teacher can check for understanding by having students flash the appropriate card for the expression being enacted.

3. Once students are proficient with the notion of facial expressions as actions intended to communicate nonverbally, introduce the notion of reaction.

- When someone communicates via a particular expression (an action), what reaction can be expected?
- Does everyone react in the same way to the same expression/action? If not, why not?
- What happens if the person communicating via an expression is misunderstood? What does the communicator experience? What type of interaction takes place?

4. Assign students to cooperative learning groups charged with developing "chain reaction" scenarios based on nonverbal communication via facial expressions. Lead them to understand that, unlike toppling dominoes in the introductory activity, nonverbal actions and reactions can be quite complex and unpredictable. Help students explore how nonverbal communication can lead to greater understanding, misunderstanding, or confusion. Students can start with scenarios that take place at school—in the hallways, in the classroom, at lunch, or on the playground.

Encourage the learning groups to communicate their scenarios in any appropriate medium: role plays, narrative passages, poems, etc. In this way, they will need to consider the best way to communicate a message while they lay the groundwork for a conceptual understanding of communication.

5. Assist students as they form conclusions about how facial expressions can provide characteristics and noncharacteristics of the concept of communication.

Part II: In the Eye of the Beholder

1. Provide students with an array of optical illusions. *Young Scientists Explore the Five Senses*, cited above, is one source of examples. Allow students to experience the ambiguity or confusion that optical illusions can produce, then lead them to discuss this.

- How do we learn to use our eyes? How is it possible to know what's "really" there to be seen?
- What causes people to see things differently?

2. Students can learn more about the danger of misjudging facial expressions by watching a preselected video or television program with the sound turned down. The teacher can select examples where a person's nonverbal and verbal communications complement or conflict with each other. There is bound to be some lively disagreements in class about how to interpret expressions correctly.

Have students discuss the following questions, providing examples to substantiate any assertions they make about the nature of nonverbal communication.

- Why might different people have different interpretations of the same visual expression?
- What are the consequences of this at home? At school? At work? Among friends?
- Are there ways to clarify facial expressions? That is, how can the communicator strive for more clarity? How can the person "reading" the message be more accurate?

3. Lead students to form conclusions about the work of interpreting nonverbal communication.

- What happens if this work is not done?
- Who is responsible for it?
- Since "reading" facial expressions is such hard work, it must be an important arena of socialization. Where is it taught? By whom? To whom? Who does this work? When and why?

Part III: Nonverbal Messages Are Everywhere

1. Introduce students to the notion of a perspective using the concepts developed in Part II. Instruct them to write a story from the perspective of any person or object in the school.

- What is that person's/object's view of the school? Of the students? Of the teachers? Of the administration? Of the marching band? Of the students in particular classes?
- What does that person/object hear? See? Say?
- What features does this person's/object's perspective share with others'?
- When conflicts in perspective exist, what happens? Who does the work of figuring out which perspective is "right"? Is there ever a single right perspective? When?

Optional: Use a "Rashomon"-like strategy of having the members of each cooperative learning group tell the same story from a different perspective. Again, the perspective can be human or otherwise. The most important feature of this step is to help students realize the concept of communication is not clear-cut or simple and that actions, reactions, and interactions will vary according to who is involved in the communication.

2. Help students consider the notions of audience and purpose. Assign them to cooperative learning groups charged with creating a "silent" movie, using pictures, sketches, or what-

ever facilities are available, to create a story about the world today. Each group will need to determine ahead of time who would comprise the audience, which major ideas should be included, whose perspective(s) will be represented, and whose perspective(s) will be ignored.

The single restriction on this activity is that it be completely nonverbal. Drama and theatre exercises (such as those in the Wisconsin Department of Public Instruction's *A Guide to Curriculum Planning in Classroom Drama and Theatre*) can help prepare students for this step.

3. Facilitate a discussion of the characteristics and noncharacteristics of nonverbal communication, as gleaned from this activity.

Appendixes

A. A Sample Concept Analysis of "Life's Work"
B. Wisconsin School District Standards and Rules
C. Middle School Career / Vocational Competencies

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A Sample Concept Analysis of "Life's Work"

For a teacher like Mr. Moro in Classroom Scenario B to design learning activities that would help his students form specific concepts, he would need to have re-examined his own concept meanings. He would have to have concluded, for example, that a concept like "organization" was subsumed by life's work if exploring life's work was to be a goal of his curriculum. This appendix offers a brief, sample analysis of the concept "life's work" that might have been done by a small group of Mr. Moro's colleagues involved in *Exploring Life's Work*. It is designed to provide teachers unfamiliar with concept analysis a sense of how concepts are formed and developed and to help them obtain an initial sense of the scope of broad concept "life's work."

Concept analysis systematically examines a concept. As a classroom tool it can help teachers

- understand the elements of concept learning,
- plan, select, or design concept-based student learning activities, and
- rethink or re-examine their own thinking about specific concepts under consideration.

What follows here is a description of five elements of a typical concept analysis—characteristics, noncharacteristics, examples, nonexamples, and a definition—and samples of each as generated by a group of the educators who were involved in developing this guide. The reader should bear in mind several points while reading this appendix.

1. **When dealing with a broad concept like life's work, there are no right or wrong answers.** The reader may, and probably should, disagree with some of the samples or think of other possibilities for them.
2. **Analyzing a concept as broad as "life's work" is difficult.** When developing lessons, units, and courses, middle-level teachers may wish to introduce concepts subordinate to life's work. In general, the more restricted, concrete, and narrow the concept, the easier it is to teach. Yet students need to learn broader concepts for the reasons argued in other chapters of this guide.
3. **This sample analysis was accomplished by adults.** Middle-level learners have their own interests, concerns, questions, and insights that will give their concept analyses a different flavor than the adult analysis.
4. **The process of concept analysis is recursive.** That is, it is never finished and continually open to refinement. However, it is important for middle-level learners to understand and make explicit the mechanisms of concept analysis.

Characteristics and Noncharacteristics: Essential Features That Define a Concept

Concept analysis requires learners to be able to recognize the attributes that distinct situations or objects have in common. Learners may arrive at these attributes on their own or with the assistance of a teacher by examining and analyzing the situation or object. At the same time, learners must learn to identify essential and nonessential attributes of a concept and to differentiate between the two. Thus concept formation requires that students be able to classify the situation or object in question as well as to discriminate between those that do and do not fit into the classification.

Characteristics. Characteristics are the set of essential features or attributes of a particular concept that an observed situation or object (example) will possess. Learners can develop a list of these essential characteristics through participating in teacher-led presentation, reading, interviews, or other activities. A list of some of the characteristics of the concept "life's work" follows.

- Life's work builds on past and present knowledge.
- It requires the interaction of human beings with something.
- It is organized by systems, including inputs and outcomes.
- It involves cognitive and/or physical processes and is transformative in nature.
- It requires consideration of long-term consequences.
- It involves conscious thought.
- It is enhanced by an understanding of self.
- It benefits the self and/or others.
- It is cyclical in nature.

In attempting to analyze very broad, global, and abstract concepts, it is likely that the characteristics will also be broad, global, and abstract. This can be frustrating at first, but should lead to greater refinement of the concept.

Noncharacteristics. These are features that may or may not be present in a concept. They are not essential features or attributes of life's work. Learners tend to want to develop noncharacteristics simultaneously with characteristics, sorting the attributes they develop into one of these two categories. Noncharacteristics are not necessarily the opposite of characteristics. A list of some of the noncharacteristics of the concept "life's work" follows.

- Life's work happens accidentally.
- Its results can always be experienced directly or tangibly.
- It concentrates only on means.
- It focuses on products.
- It can be measured quantitatively.
- It is limited to competitive behavior.

Note that these noncharacteristics are often frequently mistaken as essential characteristics of life's work. The value of a noncharacteristic results from the fact that it might be confused by some as a characteristic. If it is obvious to everyone that something is a noncharacteristic, for example, "life's work happens only on the moon," then it has little value in helping form or further develop concepts. In the case of the last noncharacteristic listed above some young adolescents will have the preconception that life's work is limited to competitive behavior. Examining this noncharacteristic will help them develop a clearer sense of life's work—learning, perhaps, that work can be cooperative and collaborative.

Examples and Nonexamples: Illustrations of a Concept's Attributes

Examples are pictures, objects, sets of words, scenarios, stories, articles, events, experiences, videotapes, or other media that, *as a complete set,* illustrate all of the unique and essential characteristics of a concept. When taken together, one concept's characteristics—and therefore the examples that illustrate it—must be unique; otherwise the concept would be identical to another concept. Remember, however, that global or abstract concepts evolve and change: today's "complete set of examples" for the concept of life's work may be incomplete next week.

Concrete pictures and objects make appropriate examples of specific or concrete concepts but are unlikely to contain the complete set of an abstract concept's characteristics. Global/abstract concepts may require concrete examples in addition to more abstract ones; writing and speaking are good tools for communicating specific, abstract characteristics.

Nonexamples take the same form as examples (pictures, objects, scenarios, stories) but need to be illustrations that learners might incorrectly call examples. Nonexamples illustrate some but not all of the essential characteristics of a concept. The purpose of using nonexamples is to help learners differentiate them from examples (and therefore noncharacteristics from characteristics). Teachers need to take care to develop or find nonexamples that clearly represent noncharacteristics; the juxtaposition of an example and nonexample should lead learners to develop a clearer picture of the concept.

Teachers need to bear in mind that

- examples and nonexamples help learners generate examples of concepts; developing them is not a one-shot process. The process of exploring life's work needs to be accomplished in an interactive and ongoing manner.
- learners can only achieve an appropriate level of conceptual sophistication by seeing enough examples and nonexamples to permit this. The number needed depends on the complexity and abstraction of the concept.
- students will develop a distorted and incomplete view of a concept if they are exposed to too few examples.
- they should tailor the type of example provided to the type of concept it illustrates.

An example illustrating the characteristics of life's work. What follows are examples for the concept of life's work created by a small group of teachers who were involved in the development of this guide. These examples take the form of a scenario about workers and their activities. The reader may refer back to the list of characteristics and noncharacteristics of life's work that appear on page 135. It is not possible for one example of a global/abstract concept such as life's work to possess all of its unique and essential characteristics. But over an extended period of time, in a classroom setting, the teacher can ensure that enough examples are created to provide the desired level of conceptual understanding. The use of one example will naturally evolve into another that will further refine a concept. In the classroom, a great deal of discussion will surround the appropriateness of any example: this is because understanding abstractions requires explanation, inferences, and further generalization.

> Maria Santos and Jeffrey Clark are partners in an advertising firm. It is a small business and the two of them personally handle every client's advertising needs. Today, they're working on a project for a restaurant owner. Together, they review what has worked in the past, brainstorm for ideas, analyze every approach they develop, and propose several alternatives. When they have compiled at least three alternative advertising campaigns, they go back to the client for feedback and to recheck the client's needs. Their clients nearly always excited about their final proposals for ad campaigns.

This example of life's work includes the following essential characteristics (previously listed on page 135):

- It requires interaction of human beings with each other.
- It involves cognitive and/or physical processes; it is transformative in nature.

- It requires consideration of long-term consequences.
- It involves conscious thought.
- It benefits the self and/or others.

The formation of a global/abstract concept like life's work does not begin or end in the middle grades. However, middle-level curriculum has a vital role to play in helping young adolescents refine their life's work concept, and it can help lay the conceptual groundwork for the development of a more sophisticated or highly refined concept in the future.

Two more examples that contain characteristics of life's work follow. Read each one and list the characteristics it includes. Then, try to identify which of the essential characteristics each contains and decide if you feel they are consistent with your current concept of life's work.

> Jim and Melinda Horgan both work full-time. They have a three-year old daughter and live in the downtown section of their city. On their busy schedules, it can be difficult to accomplish needed work at home like cleaning house, fixing meals, and doing yardwork. For a while, the house began to look shabby. Jim and Melinda sat down together one night to discuss the situation and developed a plan to keep up with the huge amount of work it takes to maintain a house. First they drew up a list of ongoing chores that needed doing. Then they each figured out a day and time to complete each task and created a "cleaning calendar" for themselves. Soon, they realized they made it possible for themselves to accomplish chores, to improve the house's appearance, and to feel more relaxed after work in a well-kept home.

> Bill Manoogian came to the rural town of Oak Grove to teach social studies in the small high school there. Bill is a highly self-motivated, progressive, energetic teacher. He saw that Oak Grove's social studies program desperately needed revamping: the textbooks were decades old, the curriculum had a narrow focus on factual information, and the students were unmotivated to learn about social studies and history. Bill met with other teachers, students, and parents for input on what a new program might include. After carefully assessing the students' and community's needs, Bill developed a new, concept-based social studies program with numerous "hands-on" learning experiences designed to motivate and involve learners. He makes constant improvements and continually upgrades his materials based on students, teacher, and parent evaluations of his work. The new curriculum has achieved its goal of motivating students to learn: in-class enthusiasm is high, class discussions are lively, and test scores are improved. Bill has also benefited from the new program. He enjoys coming to work and his students' enthusiasm and likes the challenge of developing new and challenging material for his classes to devour.

A nonexample illustrating the noncharacteristics of life's work. What follows are several nonexamples for the concept of life's work. Proceed as before, reading the first scenario and the list of its noncharacteristics.

> The managers at the Mutual Insurance Company claims office run a tight ship. For the past four months office productivity has been charted at the

> highest ever, thanks to a new incentive program for unit managers. Each manager is in charge of 20 workers, and each unit is pitted against the others in a contest to see who can cut the most corners and increase productivity by whatever means necessary. The workers in Jim Mitchell's unit cut all coffee breaks, took no sick days (even when necessary), and worked one hour of overtime each week to increase their productivity by 15 percent. Now they're the envy of the company. "I knew we could do it," says Jim. "Winning the contest meant everything to us. We lost the last one. We couldn't let our unit be embarrassed again." The prize for this contest is that each worker in the unit gets one day off with pay.

This is a nonexample because, although it does possess some of the characteristics of life's work, it also includes noncharacteristics:

- It is limited to competitive behavior.
- It focuses on products.

This nonexample is a good one because young adolescents are likely to identify it as an example of life's work. A good nonexample holds the potential for helping learners further refine their global or abstract concepts: it challenges learners' existing conceptualizations. Nonexamples are an essential part of concept analysis and are as powerful as examples in helping learners form or develop global/abstract concepts. Nonexamples may include some of the essential characteristics of a concept, but not all of them.

Two more sample nonexamples follow. Read them, and try to identify the noncharacteristics each contains. Do you agree that they contain noncharacteristics? If so, explain why they are noncharacteristics.

> The Cohens' yard is in desperate need of cleanup and landscaping. John and Margaret both work full time; their two children, Brad and Megan, are busy with school and related activities. It seems impossible to find time to work on the project. One weekend, Megan raked out the heavily weeded area near the fence. The next weekend, Brad found time to seed the lawn, but later learned he had chosen the spot where Margaret wanted to put a garden. Margaret called a landscaping company for an estimate on building a deck, but scheduled the estimate the week John was out of town. The landscapers drew up plans for the deck, with Margaret's input, and building on the project started two weeks later.

> Pine Hill High School FHA-HERO has always been highly regarded in the community. The group is constantly in the small town's newspaper for one activity or another. Last year's pizza sale raised over $450 for the group; the spaghetti supper made over $500 for them. The group's officers voted to spend the money on new officer's uniforms, new equipment for the family and consumer education room, and a gift for their advisor. The other members of the group became upset over this decision; over the past semester, membership has dropped by 75%. One member said, "The officers no longer care about what everyone gets out of FHA-HERO. All they care about is how good we look in the community. I got nothing out of being a member—except the 20 pizzas my family bought during the pizza sale!" The officers respond by offering cookies and punch at every meeting and by offering a prize to the member who can recruit the most new members.

Remember that this simple analysis is much broader than what teachers will do in planning lessons. The authors felt, however, that looking at the broad concept might be a useful exercise for the reader trying to analyze the concept of life's work for the first time. It should also be noted that concept analysis is much easier if at least two people are involved. It will be difficult to analyze a concept without engaging in a dialogue about it. The cooperative nature of concept analysis is one of its features that makes it an ideal teaching method for young adolescents.

Definitions and Concept Analysis

The final element of concept analysis is the definition, which is a statement that incorporates all of the essential characteristics of the word that represents the concept in question. Students need to be encouraged to develop their own definitions and not merely copy them from a dictionary. Teachers have read numerous student papers that begin with the phrase, "According to Webster. . . ." Using the dictionary as the sole resource for definitions can lead to mere memorizations and may inhibit real understanding or learning. Rote memorization may in fact limit students' creative thinking. The teachers' role is to assist learners in personalizing definitions by building upon and expanding their own existing knowledge and background experiences. While a dictionary can help students start building a definition, it will not necessarily provide the best definition of the *concept* a word communicates.

The small group of teachers who used concept analysis to refocus their thinking about life's work concluded that one way the concept might be defined is:

> Life's work involves conscious effort aimed at the transformation of concrete objects and abstractions into different forms to produce benefit for oneself and/or oneself and others.

Conclusions and Observations

Concept analysis is this process of developing each of the five elements (characteristics, noncharacteristics, examples, nonexamples, and a definition). Teachers need to be aware that, in order to clarify their own thinking, they need to re-analyze each concept before attempting to help students form or refine theirs. Young adolescents deserve to know what major concepts will be the focus of each of their courses and programs. And learners deserve to receive assistance in relating each of these major concepts to a global/abstract one such as "life's work."

While concept analysis may, at first, appear to be an easy exercise, in practice, it is not. Inherent in the process is a "give and take" between the five elements. If one element is changed, all the others are affected. That is, if a characteristic is added or deleted, examples, nonexamples, and the definition will need to be changed. This action encourages students to examine interrelationships constantly, and it is this mental operation that is at the heart of thinking and learning.

Concept analysis is carried out slowly and thoughtfully, with ample time for learners to listen, read, view, discuss, and even disagree about a suitable definition and appropriateness of characteristics and examples. Given the complexity of some concepts, it may take as long as an entire semester for learners to develop a sense of ownership of and personalized meaning for a concept. Throughout the quarter or semester, several smaller concepts can be taught that will later form building blocks of the larger concept.

Wisconsin School District Standards and Rules

Implementing curriculum as suggested by this guide will help school districts respond in a timely manner to a number of Wisconsin's school district standards and their attendant rules. The following paragraphs identify statutes included under 121.01(1), the corresponding rules, and a discussion of how a middle school program based on this Guide might represent a partial response to these requirements.

Standard (b)

121.02(1)(b), Wis. Stats. Annually, establish with school board employees a professional staff development plan designed to meet the needs of individuals or curriculum areas in each school.

PI 8.01(2)(b), Wis. Adm. Code. Each school district board shall annually establish a professional staff development plan designed to meet the needs of individuals or curriculum areas in each school. The plan shall be developed with the cooperative efforts of licensed support staff, instructional staff, and administrative staff.

Discussion. This guide proposes a concept-centered curriculum, the use of cooperative group learning, and appropriate learning activities. The process for concept learning and teaching differs significantly from those for fact, principle, attitude, and skill learning. Inservice on the learning and teaching strategies that best help students form or develop concepts will almost certainly need to be part of the professional staff development plan of districts planning to implement this curriculum.

Many junior high and middle-school teachers, including many whose teaching schedule is split between the middle and high school, possess an inadequate understanding of the intellectual, social and emotional, and physical needs of young adolescents. To implement a successful program based on this guide these teachers will need inservice on the nature, needs, and characteristics of the middle-level learner.

Standard (e)

121.02(1)(e), Wis. Stats. Provide guidance and counseling services.

PI 8.01(2)(e), Wis. Adm. Code. 4. The program shall provide developmentally appropriate educational, vocational, career, personal and social information to assist pupils in problem solving and in making decisions.

5. The program shall include pupil appraisal, post-secondary planning, referral, research and pupil follow-up activities.

Discussion. The content and approach of *Exploring Life's Work* represent a conscious response to the "Career/Vocational Competencies" included in the Wisconsin Developmental Guidance Model (WDGM). This model is presented in the Wisconsin DPI publication *School Counseling Programs: A Resource and Planning Guide (Bulletin No. 6520).* The WDGM suggests that the following competencies are developmentally appropriate for the middle level:

- understanding decision-making skills
- learning to cope with change in school, at home, and in the community
- becoming informed about alternative educational and vocational choices and how to prepare for them
- relating personal interests to broad occupational areas
- understanding and learning to use communication skills
- learning about conflict management with adults and peers
- learning that sex role stereotyping, bias, and discrimination limit everyone's choices, opportunities, and achievement

Chapter 2 of *School Counseling Programs: A Resource and Planning Guide* specifies that "The WDGM implementation process encourages maximum participation of all those involved in helping children and adolescents grow and develop." (p. 9.) Programs in which the counselor is the sole resource provider will undoubtedly be limited in scope. Guidance programs that involve a variety of school staff are better able to help students attain the necessary competencies. Implementing the content of this guide requires true curricular coordination with the WDGM: teachers participate in delivering portions of the model.

Standard (k)

121.02(1)(k), Wis. Stats. 1. By September 1, 1988, develop a written, sequential curriculum plan in at least 3 of the following subject areas: reading, language arts, mathematics, social studies, science, health, computer literacy, environmental education, vocational education, physical education, art and music. The plan shall specify objectives, course content and resources and shall include a program evaluation method.

2. By September 1, 1989, develop a written, sequential curriculum plan in at least 3 additional subject areas specified in subd. 1.

3. By September 1, 1990, develop a written, sequential curriculum plan in all of the remaining subject areas specified in subd. 1.

PI 8.01(2)(k) Wis. Adm. Code. 2 and 2b. Each school district board shall develop, adopt, and implement a written school district curriculum plan which includes the following: . . . a grade 7 through 12 sequential curriculum plan in vocational education.

3. Each sequential curriculum plan shall specify objectives, course sequence, course content, resources and an allocation of instructional time by week, semester, and school term. The school district board shall establish in the school district curriculum plan the allocation of instructional time, by week, semester and school term, among all subject areas.

4. Each sequential curriculum plan shall include a program evaluation method which provides that components of the sequential curriculum plan shall be monitored continuously. The overall program evaluation method shall be reviewed at least once every five years and revised as appropriate to ensure that pupils meet the curriculum objectives.

5. The school district curriculum plan shall be consistent with the approved education for employment program under ch. PI 26.

6a. Computer literacy objectives and activities shall be integrated into the kindergarten through grade 12 sequential curriculum plans.

6b. Environmental education objectives and activities shall be integrated into the kindergarten through grade 12 sequential curriculum plans, with the greatest emphasis in art, health, science and social studies education.

Discussion. A middle school curriculum plan based on *Exploring Life's Work* would comply with the requirement for a "sequential curriculum plan in vocational education" in the middle school grades if the program begins by grade 7. The objectives, course sequence options, course content, and resources it includes represent contemporary vocational education programming for this level. Similarly, it was designed, in part, as vocational education's response to education for employment and intended to serve as a resource to the staff person designated to coordinate that program.

Standard (L)

121.02(1)(L), Wis. Stats. 2. In grades 5 to 8, provide regular instruction in reading, language arts, social studies, mathematics, science, health, physical education, art and music. The school board shall also provide pupils with an introduction to career exploration and planning.

PI 8.01(2)(L), Wis. Adm. Code. 3. In grades 5 through 8, regular instruction shall be provided in reading, language arts, social studies, mathematics, science, health, physical education, health, art and music. In this subdivision, "regular instruction" means instruction each week for the entire school term in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed under par. (k), except that in middle level formats which offer or require a variety of exploratory experiences for pupils, such as foreign language, business education, vocational agriculture, technology education, home economics education, and marketing education, regular instruction in health, art and general music may be provided as follows:
a. In grades 5 and 6, each week for the entire school term, or the equivalent in instructional time and course content, and in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed and adopted under par. (k).
b. In grades 7 and 8, in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed and adopted under par. (k).

PI 8.01(2)(L), Wis. Adm. Code. 5. An introduction to career exploration and planning, through a one-semester course or the equivalent in instructional time and course content, shall be integrated in grades 5 through 8.

Discussion. (PI 8.01(2)(L) 3). Whether or not a school offers a "variety of exploratory experiences" affects what constitutes "regular instruction" in health, art, and general music or how much instructional time must be devoted to these areas. When a school, using a middle-level format, adopts and implements a curriculum plan based upon this guide, the provisions of paragraphs "a" and "b" apply to health, art, and general music. If those conditions are met, grade 5 and 6 health, art, and general music may be provided " each week for the entire school term or the equivalent in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed and adopted under par (k)." Similarly, if the school uses a middle-level format to implement curriculum based on this guide, grade 7 and 8 health, art, and general music may be provided "in sufficient frequency and length to achieve the objectives and allocation of instructional time identified in the curriculum plans developed and adopted under par. (k)."

Discussion. (PI 8.01(2)(L) 5.) "Career exploration and planning" or "enabling students to develop concepts that will help them begin to recognize their potential to lead a productive life" is the goal of the *Exploring Life's Work* curriculum. Each of the general objectives included on page 141 are directly related to the competencies and concepts students must develop to make informed career planning decisions. While this is not a systematic exploration of careers, it is an exploration of what is involved in careers.

As little as one semester of the content suggested *Exploring Life's Work* (for a program of that duration) provided to all students within grades 5 through 8 would place a district in minimum compliance with the requirement that students be provided with "an introduction to career exploration and planning." Similarly, if the equivalent of one semester of the suggested content (for a program of that duration) were infused using the equivalent of one semester of instructional time, a district would also be in compliance. Beyond one semester, time devoted to the content/concepts of "career exploration and planning" is a matter of local discretion. The provisions of standard (k) do, however, require "A grade 7 through 12 sequential curriculum plan in vocational education" which is inextricably related to "career exploration and planning."

Standard (m)

121.02(1)(m), Wis. Stats.. . . [P]rovide access to an education for employment program that has been approved by the state superintendent.

PI 26.01, Wis. Adm. Code. . . . The purpose of education for employment programs is to prepare elementary and secondary pupils for employment, to promote cooperation between business and industry and public schools, and to establish a role for public schools in the economic development of Wisconsin.

PI 26.02, Wis. Adm. Code. 4. "Career exploration and planning" means the process by which elementary and secondary pupils identify and evaluate life and work choices, explore and plan career goals, and acquire realistic life and work decision-making skills.
(8) "Employability skills and attitudes" means the cognitive and effective skills needed by pupils to obtain and retain employment, and which are applicable and transferable to general employment situations.

PI 26.03, Wis. Adm. Code. 4. All pupils in grades kindergarten through 12 shall have access to an education for employment program which provides for the following:
a. Instruction which provides for the practical application of basic skills in the general and vocational curricula.
b. School supervised work experience. Work experience may include community field experiences relating to work in grades kindergarten through grade 12, more specific occupational training in grades 7 through 12, and paid work experience in grades 10 through 12.
c. Career exploration and planning which also addresses sex-role stereotyping in career decision making.
d. Instruction in employability skills and attitudes.

Discussion. This guide represents an ideal response to the education for employment requirement at the junior high/middle school level. A primary purpose of all education is "to prepare elementary and secondary pupils for employment." Education for employment requires the involvement of the entire educational enterprise.

The "practical application of basic skills," "career exploration and planning," and "employability skills and attitudes" represent the essence of the curriculum proposed by *Exploring Life's Work*.

Middle School Career/Vocational Competencies

According to the Wisconsin Developmental Guidance Model (WDGM) middle-level learners need to acquire these key competencies. These contribute to adequate preparation for life's work via activities such as those listed in the right-hand column. The WDGM suggested that a diverse group of individuals should be responsible for teaching these skills. Thus teachers, parents, counselors, members of the community, and individuals in business and industry all play a role in preparing young adolescents for life's work.*

Competency	Suggested Activity
Develop internal academic motivation.	Discuss with students and parents motivation and how it relates to academic performance. Develop incentive partnerships with local business/industry to promote academic performance.
Develop good study skills.	Work with parents to enable them to assist their children with study skills and homework.
Develop a sense of the future and how to move toward it.	Promote participation in future problem solving. Carry out staff development on importance of students obtaining a future/goal orientation.
Understand strengths and abilities and how to learn most effectively.	Inform parents about learning styles and tutoring strategies. Conduct staff development on learning styles and adapting teaching strategies to meet the needs of students.
Exhibit problem-solving skills.	Encourage use of problem-solving skills in the classroom. Provide information for parents and others on the importance of problem-solving skills.
Understand physical, emotional, and intellectual growth and development.	Do group work to discuss the rapid changes students are experiencing. Assist staff to plan human growth and development classes. Assist parents with growth and development issues.

***Source:** This information was adapted from pages 24-26 of *School Counseling Programs: A Resource and Planning Guide*, published by the Wisconsin Department of Public Instruction, 1986.

Competency	Suggested Activity
Develop self and social self-concept.	Work with groups to explore individual differences and gain an acceptance of them. Teach students self-assessment and self-referral techniques. Work to help parents and teachers understand the importance of a positive self-concept and how to foster it in all children.
Understand and develop peer relationships.	Provide curricular and extracurricular activities which encourage heterogeneous and homogeneous relationships. Assist staff in developing curricular offerings which deal with interpersonal relationships.
Exhibit positive attitude toward school, family, and self.	Assist teachers and parents attempting to relate to students with a negative attitude. Carry out staff development on creating a positive school climate.
Learn to deal with ongoing changes in personal and academic life.	Provide information on changes in the work world and how to be prepared for them.
Understand decision making skills.	Carry out decision making and problem-solving activities for groups and classes. Provide staff development on how decision making can be incorporated into all curricular areas.
Learn to cope with transition in school, home, and community lives.	Have classroom discussions on expectations in new environments and how to respond appropriately. Work with teachers, parents, and others to assist students in transition periods.
Become informed about alternative educational and vocational choices and preparation for them.	Coordinate community resources to make all students more fully aware of vocational choices and the education required for them.
Relate personal interests to broad occupational areas.	Provide discussions for students on how interests are related to occupational choices. Carry out staff development activities on interests, occupational choices, and career development.
Understand and use communication skills.	Teach communication skills. Provide staff development on requiring good communication skills in all subject-area classes.
Learn that sex role stereotyping, bias, and discrimination limit choices, opportunities, and achievement.	Inform students and parents about the career opportunities open to both sexes. Promote a career day featuring parents and community members who work in traditional and nontraditional careers.

BEST [illegible]